



**Rapid Evidence Review**

# **Policy interventions to mitigate negative effects on poverty, agriculture and food security from disease outbreaks and other crises**

**20 May 2020**

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Final version, 4-4

20 May 2020

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## Acknowledgements and disclaimer

We thank all those who took the time to be interviewed by us — see Chapter 2 — and those who have commented on an earlier draft of this review.

This report was produced with the support of UKAID through funding to the Agricultural Policy Research in Africa (APRA) Programme of the Future Agricultures Consortium (FAC) and the Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC) Programme.

The interpretations and opinions expressed in the report are, however, not necessarily those of the people we interviewed, nor of the Overseas Development Institute. The views expressed in this report do not necessarily reflect the UK government's official policies. The authors are solely responsible for any errors and omissions.

## Abbreviations

AIDS	Acquired Immunodeficiency Ssyndrome
AIM	Amanah Ikhtiar Malaysia
ARI	Acute Respiratory Infections
ART	Anti-retroviral therapy
ARV	Anti-retroviral
CAFO	Concentrated animal feeding operations
CDC	Centre for Disease Control
CFW	Cash For Work
CIDSS	Comprehensive and Integrated Delivery of Social Services
COVID-19	Coronavirus disease 2019 [WHO designation]
DEC	Disasters Emergency Committee
DEERF	DFID Ebola Emergency Response Fund
DFID	Department for International Development
DG-ECHO	Directorate-General for European Civil Protection and Humanitarian Aid Operations (formerly, European Community Humanitarian Office)
DR	Democratic Republic
DRC	Democratic Republic of Congo
EPF	Employee Provident Fund
ERAP	Enhanced Retail Access for the Poor
EU	European Union
EVD	Ebola Virus Disease
FAO	Food and Agriculture Organization of the United Nations

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FEWSNET	Famine Early Warning Systems Network
FGM	Female Genital Mutilation
FSNAU	Food Security and Nutrition Assessment Unit
GDP	Gross domestic product
GIEWS	Global Information and Early Warning System, FAO
HDDS	Household Diet Diversity Score
HIC	High Income Countries
HIV	Human immunodeficiency viruses
HPAI	Highly Pathogenic Avian Influenza (H5N1)
IFPRI	International Food Policy Research Institute
ILO	International Labour Organization
ILRI	International Livestock Research Institute
IMF	International Monetary Fund
INPRES	Instruction of the President of the Republic of Indonesia
IPC	Integrated Phase Classification
LDC	Less Developed Country
LIC	Low-income country
LMIC	Lower-middle-income country
MENA	Middle Eastern and North African
MIC	Middle-income country
MSF	Medecins Sans Frontières
NCDC	Nigeria Centre for Disease Control
NDMA	National Drought Management Authority, Kenya
NERC	Natural Environment Research Council, UK
NFA	National Food Authority, Philippines
NGO	Non-governmental organisation
OIE	World Organisation for Animal Health (formerly, Office International des Epizooties)
OVC	Orphans and Vulnerable Children
PDR	People's Democratic Republic
PPE	Personal Protective Equipment
QR	Quick Response (code)
RCT	Randomised Control Trial

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RER	Rapid Evidence Review
RNA	Ribonucleic acid
RUDF	Regional Urban Development Fund
SARS	Severe Acute Respiratory Syndrome
SIF	Social Investment Fund
SSA	Social Security Act
STEPS	Social, Technological and Environmental Pathways to Sustainability (Research Centre at University of Sussex)
TCP	Technical Cooperation Programme
TLPP	Temporary Livelihood Protection Program
UHS	Universal Health Scheme
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNMEER	United Nations Mission for Ebola Emergency Response
USAID	United States Agency for International Development
VAC	Vulnerability Assessment Committee
WASH	Water, Sanitation & Hygiene
WB	World Bank
WFP	World Food Programme
WHO	World Health Organization
WTO	World Trade Organization

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## Executive Summary

This review draws lessons from previous shocks that may be relevant to dealing with the consequences of COVID-19 for agriculture, food systems, food security and rural livelihoods in developing countries and especially in sub-Saharan Africa. Most of the evidence comes from reviewing seven viral health crises<sup>1</sup> and two economic shocks<sup>2</sup>.

Few other health crises resemble the COVID-19 outbreak. Lessons from previous crises may therefore not be directly applicable to the current pandemic. It remains to be seen (in early May 2020) how the disease will develop in rural areas. There is a risk, however, that the economic consequences of measures to control the disease may be stronger than those of disease itself.

Five such consequences may be seen:

- Agricultural output may fall, mainly owing to reduced demand for perishables and air-freighted export crops.
- Women may face additional work in caring for the sick, on top of their often already heavy workloads — their daughters may be taken out of school to help them.
- Rural household incomes will fall, particularly for households that rely on high-value perishable agricultural crops and air-freighted export, on rural non-farm business and employment, and on remittances from migrants in urban areas — both domestic and international.
- Some business in the food supply chains may go bankrupt as demand falls and transport is disrupted.
- Food insecurity may rise, in both rural and urban areas, mainly due to lower household incomes and possibly from higher agricultural prices.

We need to learn from how previous crises were tackled. Dealing with novel crises involves uncertainty about:

- The crisis and its effects on economy and society;
- Effective responses — aggravated by the lack of evaluation of previous responses to similar crises; and
- What can be implemented with the capacity that has been developed and the data available — primarily in government, but also with private enterprise, civil society, international organisation and aid partners.

Remarkably, in responses to medical crises, livelihoods have often been ignored, especially when it comes to informal activities — as is much smallholder farming, trading, and the interactions of rural and urban economies. This is particularly costly, since most people vulnerable to crises — those on low incomes, who lack assets, who may have precarious health — work informally.

### Lessons learned

We also need to learn from the policies, investments and assistance that have worked in previous crises.

**Livelihoods need to be maintained as far as possible.** This is what those most affected prioritise. Livelihoods allow people to live, to function, to have self-respect and dignity. They thus often matter more than safety. Agriculture is central to rural livelihoods, food systems and food security. So too are the many informal businesses typically found in food supply chains, and the remittances from urban workers that increasingly support rural incomes.

**Health crises are highly selective.** Pathogens select epidemiologically, but thereafter their effects are determined by incomes, wealth, social class and

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<sup>1</sup> HIV/AIDS; H5N1 (avian influenza); Severe Acute Respiratory Syndrome (SARS); H1N1 (swine flu); Ebola virus disease (EVD) outbreak in West Africa and the D. R. Congo.

<sup>2</sup> Asian financial crisis of 1997 and the 2007/2008: food price spike.



gender. The impacts of health crises can thus be both extremely uneven, as well as socially unequal. Not everyone needs protection, but those most affected certainly do. Women often carry the burden of caring for the sick, their workloads can rise, and their daughters may be taken out of school to help.

**Agricultural output can be boosted very considerably over a season or two.** In general, economic recovery from crises can be stronger and faster than some fear at the height of the crisis. That is partly because much physical, human and social capital survives crises; partly because recovery commonly mobilises extra effort from actors of all kinds.

## Recommendations

These considerations imply the following recommendations:

- **To protect livelihoods**, ensure as far as possible that farmers can maintain, and preferably expand production at the next planting season; allow rural markets to operate with modest restrictions and precautions; devise ways to keep enterprises in food supply chains running or, if they have to close or operate at reduced capacity, to ensure they survive the crisis. Ensure the flow of remittances remains unblocked at both ends of the sender-receiver pipeline.
- **To maintain unhindered food supply**, do all of the above, as well as set up green channels for agricultural inputs, processing and marketing.
- **To protect those who are hard hit by the crisis**, protect and scale up existing safety nets to reach more people and if necessary, increase payments. Where safety nets do not exist, use emergency cash transfers. Target broadly to prevent exclusion errors: worry less about inclusion errors. Prioritise rural women when extending safety nets or increasing payments. Ensure that if rural girls' education suffers during the crisis, they are provided with opportunities to catch up

with their peers and supported to return to schooling.

## General lessons on responding to crises

History shows that initial responses to similar crises have often been ineffective, irrelevant or counter-productive. This is perhaps not surprising -the need to deal with novel challenges with considerable uncertainty makes it hard to get things right from the start. By limiting initial analysis and key considerations, important issues are often not considered and left under-attended.

Effective responses invariably rely on the existing capacity of organisations and people: their knowledge, skills and experience. Most effective responses thus involve doing something that is familiar, that involves skills that are known. Trying to do completely new things in a crisis is rarely possible.

Last, and not least, most of the responses to crises come from the people most affected by it. Their immediate resources — individual, household, extended households and local community — commonly provide the bulk of coping for the most vulnerable.

## Recommendations

These challenges for decision-making and implementation imply the need to:

- **Invest in understanding what is happening.** Rapid data gathering and analysis is needed. Make sure that livelihoods are covered, especially informal livelihoods. Existing data on livelihoods and household economies can help predict and project impacts of shocks, including COVID-19, where real-time data are lacking.
- **Manage adaptively.** Take prompt action but be prepared to revise responses in the light of incoming information. Engaging with communities — which needs time and resources if

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it is not to be mere co-opting — not only generates critical information, but can also generate practical responses that work locally, that outsiders may not see.

- **Find and employ those with experience of previous crises.** Include specialists from across the board: avoid privileging the views of any group of specialists.
- **Take prompt action and commit to dealing with the crisis and its effects.** This will allay fears and calm those inclined to overreact in anxiety.
- **Consider feasible options, recognising capacity limits.** This may mean responses appear insufficient to deal with the crisis. They may be modest rather than radical. Do not underestimate the contributions of all actors: it is not only what government, aid partners and international organisations do that matters. The bulk of response to crises comes from ordinary people, so it is important to work with them.

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## Summary

### Purpose of this Rapid Evidence Review

This review was commissioned by DFID to draw lessons from previous shocks that may be relevant to dealing with the consequences of COVID-19 in developing countries and especially in sub-Saharan Africa. The review addresses two questions:

- What may be the consequences of disease, and responses to it, on agriculture, rural livelihoods, food systems and food security?
- What lessons on dealing with those consequences may be drawn from previous crises?

The work for this rapid evidence review began on 03 April 2020 and a first draft was submitted on 16 April 2020.

Most of the evidence comes from reviewing seven viral health crises:

- 1980s–present: HIV/AIDS pandemic;
- 1997–2010: H5N1 (avian influenza) outbreak, mainly in Asia;
- 2003: Severe Acute Respiratory Syndrome (SARS) outbreak in Asia;
- 2009: Global H1N1 (swine flu) outbreak;
- 2013–2015: Ebola virus disease (EVD) outbreak in West Africa;
- 2018–present: EVD outbreak in the Democratic Republic of Congo; and,
- 2019–present: COVID-19 outbreak in China;

and two economic shocks:

- 1997: Asian financial crisis; and,
- 2007/2008: food price spike.

Reviews were based on existing literature about these crises and responses. In addition, nine specialists, either researchers or development practitioners, were interviewed for their knowledge and insights about previous crises and responses.

### The potential impact of COVID-19 on agriculture, rural livelihoods, food systems and food security

#### Economic impacts of COVID-19

Few other health crises resemble the COVID-19 outbreak: it is a novel crisis. Lessons from previous crises may therefore not apply directly to the current pandemic. In seeking to avoid past mistakes, there is a risk of committing new ones if undue parallels are drawn.

The virus is more transmissible than Ebola or HIV and the onset of disease is rapid, within days. The disease appears, however, to be less deadly or debilitating than most other viral pandemics. Controlling transmission is a major challenge, although measures to do so may have a greater economic impact than the disease itself.

For the economies of emerging and developing countries, the disease and its control will very probably lead to large losses of output and the contraction of GDP — by almost 1% in 2020, according to the IMF (April 17). Considerable uncertainty applies to the size and duration of these losses, depending on the epidemiology of the disease in specific countries and settings, and the measures taken to control its transmission. (Box A)

How COVID-19 may impact the rural areas of the developing world remains to be seen. On the one hand, distance from urban centres of infection and dispersed rural populations may slow transmission. The young age profile of rural populations may also mean that most infections do not progress to serious disease and death.

On the other hand, returning migrants from urban areas may facilitate transmission. COVID-19 may lead to more serious disease and deaths because some of the rural population, especially in Africa, are already in poor health, have immune systems compromised by HIV, or are malnourished. Curative health facilities, moreover, are generally lacking in rural areas.

Effects on agriculture and rural economies from disease alone may be quite modest: labour may be lost to sickness and caring, but for most infections, illness may last no longer than two weeks. Farming is already adapted to such contingencies: illness in farming households is quite frequent, labour needed at peak seasons is typically replaced by the extended family, collective self-help and hired labour. Much rural business is similarly resilient to short-term illness and other small shocks.

Of greater concern are restrictions on movement and gatherings. These are already leading to closure of rural and urban food markets, and to restrictions on public transport, thereby disrupting marketing of crops, reducing demand for farm surpluses and increasing food prices in urban areas.

Rural populations will also be affected by impacts in the urban economy. Layoffs of workers in the cities may lead to migrants returning home to their villages, spreading the disease. The flow of remittances may also be affected which, in some villages, contribute significantly to rural incomes. Closure of urban restaurants, food markets and losses of urban income may reduce demand for agricultural produce, especially high-value and perishable produce.

Restrictions on international travel may mean less capacity to carry export crops as air freight; while increased vigilance at borders may impede agricultural trade.

#### **Box A Uncertainties and debates on economic impacts of COVID-19 in the developing world**

For economies as a whole, worst case scenarios are alarming. For example, UNECA (2020) estimates that 3.3 million people may die from the disease in Africa, with economies of the continent contracting by 2.6%. Sumner et al. (2020) foresee a worst case scenario of

as many as 580 million people pushed into poverty around the world.

On the other hand, other observers' analyses argue that the disease changes few fundamentals, so that if capital, labour, and networks that sustain enterprise and trade survive the disease, then economies may rebound rather quickly when restrictions are lifted. (Baldwin 2020, Portes 2020)

In rural areas, some are concerned that the disease and related restrictions to movement may exacerbate existing threats — droughts, locusts, conflict, leading to serious loss of crops and livestock, increasing vulnerability and moving rural households into poverty, threatening food supplies, and adding considerably to food insecurity.

On the other hand, agriculture and the rural economy are loose-coupled systems, where farmers and business operators are accustomed to coping with shocks of all kinds. Mild disease and moderate restrictions on movement and gatherings, while unwelcome, may therefore have only modest impacts.

### **Consequences for agriculture, rural livelihoods, food systems and food security**

Five main changes are possible:

**Agricultural output may fall**, owing mainly to reduced demand for high-value perishables and export crops, especially those that are air-freighted. For other crops, effects may be quite small, so long as disruptions to rural markets and supply chains are not severe. If input distribution or finance that pays for it is disrupted, then farms that depend significantly on external inputs may experience further declines.<sup>3</sup>

<sup>3</sup> Many smallholders, however, apply relatively few such inputs and hence would not be greatly affected.

**Women may face additional work** in caring for the sick, on top of their often already heavy workloads. Their daughters may be taken out of school to help them.

**Rural household incomes will fall**, particularly for households that rely on high-value perishable agricultural crops and air-freighted export, on rural non-farm business and employment, and on remittances from migrants in urban areas — both domestic and international;

**Some supply chain businesses will not be able to operate to capacity** if they deal with produce for which demand has fallen, or transport is disrupted, or they are closed down by disease controls. At worst, businesses will go out of business — although some small, informal enterprises may survive if they have few capital costs and overheads and can switch labour to other activities; and,

**Food insecurity may rise**, in both rural and urban areas, mainly due to lower household incomes and possibly from higher agricultural prices. If markets are closed, then some households may lose access to food, or have to buy from more distant centres in rural areas, or supermarkets in urban areas, at higher cost. Some households, especially those on low incomes, will switch to less nutritious food.

**Such impacts are likely to be highly uneven.** Socially, infections and disease hit some hard, while others remain untouched. Economically, some households have resources to cope with loss of labour and less income while others cannot. Geographically, impacts will vary by farming systems — the type of crops and livestock produced, their dependence on labour and purchased inputs, and by the supply chains that link them to markets.

## **Lessons from previous crises and their relevance to responding to the effects of COVID-19**

## **Lessons specific to responding to COVID-19**

### **Lesson #1 Livelihoods and food systems need to be maintained as far as possible**

In many crises, those most affected usually prioritise their livelihoods: they give them the means to live, function, to have self-respect and dignity. They thus often matter more than health or safety which often are the overwhelming priority of outside responders.

Food systems similarly have high priority: not being able to access food, or only at greatly inflated costs, is alarming.

Agriculture is central to rural livelihoods, to food systems and food security. So too are the many informal businesses typically found in food supply chains. In some areas and for some households, remittances from urban migrants increasingly support farm household incomes. Rural markets, mainly informal, are critical in allowing the trading that facilitates agriculture and food systems.

### **Recommendation A Ensure farmers can maintain output**

Whatever can be done to ensure to maintain farm output should be done. This may mean, for example, some additional physical provision of inputs such as fertiliser. It may mean making additional credit available to farmers who have access to banks. It could be payments, or vouchers, to farmers, to enable them to buy inputs, hire labour, rent tractors, etc. Consult with district agricultural officers and local communities to devise measures that work in local farming systems.

In some countries, helping farmers to raise production at the next harvest would demonstrate the government's commitment to food and agriculture, allaying public fears of food shortages and high prices.

### **Recommendation B Allow rural markets to operate with modest restrictions and precautions.**

Keep rural markets functioning. Medical imperatives may require some modifications, such as installing

hand washing facilities with soap, distributing masks to traders, spacing out sales pitches, increasing the number of small, local markets to avoid overcrowding and the need for people to travel, and running markets over more days, with a rota of sellers to prevent crowding. It may even be possible in some places to encourage payments by mobile money rather than banknotes. Consult with market leaders and local government to find the best way to protect traders and customers while keeping markets open.

#### Recommendation C Set up green channels for agricultural inputs, processing and marketing

Make it crystal clear to the public and to all those engaged in crisis response, and especially those implementing controls, that farming and unhindered food supply is a priority. This applies above all to rules on imports and transport of inputs, and on transport of produce.

This does not require additional public capacity, but rather requires giving clear instructions from the leadership to civil servants, police and security forces, local government, and the general public. Not only does help keep farming and food systems functioning, but also helps allay fears [Rec. F]

#### Recommendation D Keep food supply chain enterprises running

With green channels [Rec. K], businesses in the supply chains should be allowed to continue to function. They may still face difficulties, however, if demand has collapsed — as may apply to some air-freighted export crops, for example. They thus may need bridging loans or grants to allow them to conserve capital, key staff, so that they can recover when the crisis passes.

This requires knowing what difficulties these businesses face [see Rec. H], then devising appropriate remedies, probably in consultation with business associations.

#### Recommendation E Facilitate remittances

While remittances will fall as migrant labour is laid off, for those who continue to work and earn, making

sure that remittances can still be sent is important. This may mean reducing or removing charges on mobile transactions and keeping shops and post-offices that handle physical transactions open. Keeping international flows going may prove difficult in a few countries where counter-terrorism rules restrict transactions. This can only be addressed globally by leaders and those governing the international financial system.

#### Lesson #2 Impacts of health crises are highly selective

Pathogens select epidemiologically, but thereafter their effects are determined by incomes, wealth, social class and gender. The impacts of health crises can thus be extremely uneven.

Gendered effects can be hard to spot, especially by men, but are important. Women may be more affected than men because they almost always do most of the caring for the sick. Their informal enterprises may be more vulnerable to disease controls. If health facilities come under heavy pressure from a pandemic, their access to health care for themselves and their young children may be suspended, exposing them to health risks and additional work in caring for sick children. Teenage daughters may be withdrawn from school to help with additional work.

Not everyone needs protection, but those most affected do. If people lose their productive capacity, for example, by being forced to sell productive assets, it may take them years to escape poverty, with many unlikely ever to escape. However, if they can be protected from destitution, their economic recovery to self-reliance can be swift. [Lesson #3]

#### Recommendation F Protect and scale up existing safety nets to reach more people and if necessary, increase payments.

In the face of a potentially heavy loss of purchasing power and business activity, cash transfers to large numbers are indicated. In-kind assistance risks exacerbating the problems for markets, where they are still able to function. The key is to maintain



household ability to access the goods and services they need, and to maintain business activity. Only cash can achieve this. Target broadly to prevent exclusion errors; and worry less about inclusion errors. [Box A]

Prioritise rural women when extending safety nets or increasing payments. Ensure that if rural girls are withdrawn from school, ways to encourage them to return after the crisis are in place.

Where safety nets do not exist, use emergency cash transfers. Although this may be temporary, using administration parallel to that of government, it can be the base of a future public safety net — so long as the emergency systems align where possible with public procedures.

#### **Box A Lessons on social protection from previous crises**

In the face of a potentially heavy loss of purchasing power and business activity, cash transfers to large numbers are indicated. In-kind assistance risks loss of market for local production,

Safety nets already in place need expanding. A large step-up in people covered and funds distributed can only be done by simplifying existing systems. It may well be better to focus on supporting larger programmes, possibly merging programmes to simplify provision and coverage. Work conditions should be waived, as these add enormously to costs and the labour intensity of running the systems.

Rather than trying to make targeting precise, when registers of some sort already exist, even if imperfect, use these when needs are urgent. Where need is widespread, targeting may be abandoned in favour of a general entitlement, speeding up assistance and cutting costs. This may apply especially if disease control, impedes movements of field staff.

Expanding social safety nets can arouse fears about creating a sense of entitlement among recipients. This resembles a longstanding, but long-disproved, fear that emergency cash transfers lead to dependency. A limited number of payments over the

short term can ease unacceptable hardship — such as going without food — for vulnerable households.

Different systems and agencies must coordinate. Humanitarian agencies have no time to reinvent wheels by re-learning lessons about social protection gained over many years.

No single model for delivering cash transfers can be seen. In many cases, emergency systems will need to co-exist with state systems: even where the systems remain separate, this requires joint planning.

Finally, social protection can divert both attention and funds from equally important social services, such as education, health and clean water. While delivering food aid and cash transfers satisfies agency needs to be seen to be making a difference, the more humdrum issues of keeping services running may be less appealing.

Sources: Barca & O'Brien 2018, Cherrier & McCord 2020, Kidd & Sibun 2020, Slater 2008

### **Lesson #3 Recovery from crisis can be strong. Agricultural output can be boosted very considerably over a season or two**

Often at the height of crises, prospects for recovery look bleak. Recovery, however, can be more rapid than expected: medical controls or treatments for pandemics can rapidly end them. Recovery from previous epidemics has been largely complete within one year; while much recovery can be seen from previous economic crises within five years of the initial shock. After the food price spike of 2008/09, for example, production of cereals expanded much faster than before the crisis in countries where smallholders dominate farming.

Recovery did not depend, either, on profound reforms to economies or societies. In part that may be because the shocks were not necessarily the consequence of deep-seated malaise, but were caused by just a few perturbations to the system: for example, the emergence of potent viruses, the volatility of international capital markets (Asian currency crisis),

and a perfect storm of low stocks, demands for biofuels, harvest failures and export bans that led to a spike in food prices. Much of productive capital survived these crises, allowing recovery.

Public measures to support recovery were often quite straightforward and well-known: injections of capital, variously through bank credit, small business grants, community funds, micro-finance, distribution of farm inputs; social safety nets to allow coping without loss of productive capital; redoubled commitment to provision of public goods and services in rural areas, etc. These succeed partly because it was not just government, aid partners and NGOs who were responding, but also those most affected by the shock – rural people themselves [Lesson #9].

#### Recommendation G Do not overlook modest measures, they can be effective

Faced by daunting crises, it may be felt that dramatic and radical responses are needed, such as redistribution of assets and tight controls on some markets. Experience, however, shows that more modest measures — such as cash transfers, grants and micro-finance for business, additional support to farmers, etc., are not only within the compass of existing capacity and experience, but can be effective in alleviating hardship and facilitating recovery.

### General lessons on responding to crises

#### Lesson #4 Novel crises involve much uncertainty, while previous experiences of responses lack evaluation

Dealing with novel crises involves uncertainty about:

- the crisis and its effects on economy and society;
- effective responses, in large part because responses to previous crises have not been reviewed as critically or in as much detail to provide reliable guidelines for future response; and,
- what can be implemented with existing capacity — primarily in government, but also with private

enterprise, civil society, international organisation and aid partners.

Consequently, a priority is to invest in understanding what is happening. Data will be needed both on the medical aspects of COVID-19 — infection and mortality rates, geographical spread, transmission routes, etc.; as well as on impacts on livelihoods and basic services.

Dealing with a pandemic may require different data and analysis from that normally collected and carried out by food security early warning agencies.

In the absence of formally documented knowledge, the tacit knowledge in the form of experience of those who have engaged in response to previous similar crises becomes especially valuable.

#### Recommendation H Invest in rapid data gathering and analysis

Collect data from the field on changes to livelihoods, markets for staple foods and other necessities, functioning of food and agricultural supply chains, an experiences of food insecurity — see Box B for detail. Use of mobile phones and digital records can facilitate collection, analysis and presentation of information promptly — ideally so that decision-makers have information on the situation that is not more than two weeks' old.

#### Box B Information needed to assess impacts on food and nutrition security

Focus information gathering on changes affecting populations believed to be vulnerable to food insecurity, for example, urban groups in informal settlements; rural households that lack land, labour, live in areas of poor natural resources or in remote locations; disabled and chronically sick; displaced groups in some cases, etc.

Priority information includes:

- Changes to livelihoods: impacts of disease, controls on movements and gatherings on economic activity. In particular, for agriculture,



access and cost of inputs, labour, freedom to move to fields or pasture. Ability to sell surpluses and changes to prices paid.

- Markets for staple foods and other necessities: availability of goods, changes in prices.
- Food and agricultural supply chains. Disruptions to markets, transport, and to trading, processing, wholesaling, retailing, exporting and other businesses in the chains.
- Experiences of food insecurity: difficulties in finding food in markets or paying for it; fear of infection when buying food.

Information may be collected promptly and at low cost through:

- Quantitative monitoring, of the kind usually already being done for either market information or food security early warning systems. Use historic records to control for seasonality; and,
- Qualitative interviews, by mobile phone, of panels of (a) of households sampled to reflect vulnerable groups; (b) farmers sampled to reflect diverse farming systems; and (c) trusted informants, selected to capture the range of traders, processors, transporters, wholesalers and exporters. Surveys can be repeated to track changes.

Collecting, collating and analysing data, then preparing it for decision-makers, requires staff.

Teams can be formed building on and working with existing groups that gather data in ministries, local government, chambers of commerce, NGOs, FEWSNET in some countries, FAO or WFP in others, etc. Additional temporary staff for increased activity during the crisis may be seconded from the civil service or contracted from local think tanks or market research agencies.

Because new ways of analysing data to generate predictions will be needed, both methods and data should be made open access, so that other researchers can examine, analyse and interpret the information and provide peer review. Such crowdsourcing of analysis can help guard against errors and omissions

**Recommendation I Find and employ persons who have worked on previous crises, who carry tacit understanding in their memory.**

Make sure that these include not only those who are specialists on the technical matter, but also those who are specialists on local circumstances: those who know the history of previous crises, of relations between different groups in the country and with the state, and who understand culture and politics at local levels.

**Lesson #5 Initial responses to crises have often been either ineffective, irrelevant or counter-productive**

A striking finding from this review is how often initial responses to a crisis, be it a pandemic or the economic crises, were ill-conceived. At best, they proved ineffective; at worst, they exacerbated problems, often to the detriment of livelihoods and food security. This is understandable to some degree. Reacting is not easy when the threat is unfamiliar, much is uncertain, but prompt action is needed. This applies especially to pandemics: while the impacts of most droughts are similar, the impact of most diseases are not. Under such conditions, it is tempting to fall back on analogies, favoured framings and responses.

Only when it became evident that early responses were failing, and changes were made, were most crises resolved.

**Recommendation J Manage crises adaptively**

Take prompt action, but be prepared to revisit and revise in the light of incoming information. Three things facilitate this. One, prompt information about impacts from the field becomes critical [see Rec. H]. Two, including specialists from across the board [see Rec I] helps avoid thinking within silos. Three, engaging with communities helps widen information and perspectives, hence:

**Recommendation K Consult and engage with local communities**

Engaging with communities not only generates critical information, but can also help identify practical

responses, that work locally, that outsiders may not see. Indeed, in some crises, engaging local communities has proved key to overcoming the crisis.

Engaging with communities, rather than co-opting them, takes time, so it needs to start early. Resources need to be assigned to this.

### **Lesson #6 Responses to medical crises often ignore livelihoods**

When epidemics hit, medical responses almost always get first priority, humanitarian relief comes next, and considerations of livelihoods tend to lag behind. Informal economic activity tends to get very little attention at all, yet this includes much smallholder farming, trading, and the interactions of rural and urban economies. This is particularly costly, since most people vulnerable to crises — those on low incomes, who lack assets, who may have precarious health — work informally.

Disruptions to transport from countryside to town, and the closing down of rural and informal urban markets, can harm agriculture and rural business, leading to heavy losses of rural incomes.

Information is thus critical to understanding these impacts and to reacting to problems that arise [See Rec. H to K].

### **Lesson #7 Demonstrate action and commitment**

Decision-making is not helped when some people, above all those in government, overreact to shocks. Feedback-loops that exacerbate the initial problem can be strong. Two examples often arise. One is fear of disease leading to myths about its origins and causes, with people then not reporting disease or cooperating with medical responses. The other is fear that food will not be available in markets, leading to panic buying and hoarding — by individuals, companies and state agencies — that drives up prices and thereby fuelling further overreactions.

Engaging with local communities [Rec. K] is one way to placate fear. Another is:

### **Recommendation L Leaders need to demonstrate action and commitment to allay undue fears and anxiety**

Prompt, visible action with clear messages can allay fears. This risks committing to action when much uncertainty prevails [Lesson #4], but is a lesser danger than fuelling public anxiety that nothing is being done: with adaptive management, actions can be revised. This imperative will tend to see known responses favoured, and those which are feasible.

### **Lesson #8 Effective responses depend on existing capacity and previous experience**

It is hard to respond to crises without administrative structures, procedures and staff in place. Experience defines both the range of options most likely to be considered, and those that can reasonably be implemented within the short to medium term. This applies especially to interventions in the field, for example, to safety nets.

### **Recommendation M Favour feasible responses**

Appreciate existing capacity and experience. If necessary, recruit back those with experience who have left agencies where they could be useful [Rec. B]. Avoid the temptation to try to do things that strain existing capacity: such interventions may be promising, but if badly implemented, they will fail.

This does not preclude some innovation that may be possible within existing capacity and experience; but in assessing innovations, due regard needs to be given to capacity and experience.

### **Lesson #9 In most crises, most response comes from local coping**

In crisis after crisis, what makes the difference for most individuals affected and their households is their ability to cope — or not — drawing on the means of the household, extended family, friends, local community organisations and local economy. Coping may involve drawing down on savings, or calling on assistance from family, friends and community where obligations have been established. It can be seeking additional paid work. As a last resort, coping may

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involve liquidating productive assets such as land, livestock and tools — at which point coping may be a misnomer.

The ability to cope varies, however, so see Lesson 8.

Resilience matters more than after-the-event assistance. That may not help with immediate response, but it matters for longer-run public action.

Public action should work to support coping by affected individuals, households and communities, where legal and ethical. At very least public responses should not stymie such self-help.

[Recommendation N provide external assistance that complements and facilitates local responses](#)

Respond early. Cash transfers can be delivered faster than most other forms of assistance. Being prepared in advance makes a difference. Avoid stymieing their efforts. Since assistance tends to arrive rather late in crises, sometimes as they are receding, a focus on rebuilding livelihoods may be indicated.

# 1. Introduction

The motivation for this study is stated in the terms of reference:

‘The COVID-19 pandemic is driving dramatic and rapid changes to the global economy, transportation, labour productivity and trade. There are risks that the combination of direct and indirect impacts of the pandemic will have serious consequences for impacts on food systems and livelihood systems, with consequences for poverty and food insecurity.

There is a long history of efforts to deal with food security crises, global shocks (e.g. food price crisis 2008/09) and with pandemics (EVD, SARS, etc.), but this experience and knowledge is fragmented across the development and humanitarian communities, and often only partially documented. This makes it harder to learn lessons from previous experience.

A systematic analysis of what has been learned and a compilation of lessons will be helpful to understand where previous crisis situations provide comparable scenarios for planning, and where circumstances differ substantively; and to extracting applicable principles from these previous situations.’ [Terms of Reference]

To inform its response to COVID-19’s impacts over the next year, the Growth and Resilience and the Research and Evidence Departments of DFID commissioned this RER of lessons learned from previous, comparable crises. It aims to review lessons learned that are relevant for vulnerable countries, broadly defined as those who are eligible for International Development Aid (IDA and IDA blend) as per the World Bank’s definition, and/ or have a minimum score of 20 (‘serious’) on the Global Hunger Index.

The review addresses the following questions:

## Content and effects of responses

- Which policy interventions (public and private sector) happened?
- What were their effects on food production, food and nutrition security, and the livelihoods of people on low incomes and otherwise vulnerable? Why did they happen?

- Did they succeed in their objectives? Explain what worked and what did not, and why.

## Decision-making and implementation:

- Were assumptions adopted by decision-makers realistic? If not, why not? What information was lacking?
- Was the response timely?
- What options were not used? Why not?
- How easy was it to implement responses? What difficulties were faced? How were these overcome, if at all?
- Can anything else be learned from how decisions were made and implemented?

To answer these questions, **background and context had to be established**, with the following two questions to address:

- What is the nature of COVID-19 as a shock? How does it resemble other shocks?
- How might COVID-19 develop in Africa, and especially in rural areas?

## The rest of the report

The rest of this report proceeds as follows. Chapter 2 reports on the methods used in the review. Chapter 3 first considers the nature of COVID-19 as a shock, then sets out how the disease and responses to the disease may affect agriculture, food systems, food and nutrition security, and rural livelihoods. The final Chapter 4 presents the lessons learned from the crises reviewed and the recommendations that can be drawn from them. Lessons specific to dealing with the impacts of COVID-19 come first, followed by more general lessons about responding to crises, above all those about making decisions and implementing responses.

To keep the main text relatively short and focused on lessons, the findings about responses to the nine crises reviewed have been summarised in a table in Annex A. Annexes B to J present short accounts of the

nine crises. Annex K is a literature grid that of key documents read with summaries of their main points.

## 2. Methods

The review draws mainly on secondary literature focused on a desk-based review of evidence and literature on nine recent and comparable crises:

- 1980–present HIV/AIDS pandemic
- 2003 Severe Acute Respiratory Syndrome (SARS) outbreak in Asia
- 2013-2015 Ebola virus disease (EVD) outbreak in West Africa
- 2018–present Ebola virus disease (EVD) outbreak in the Democratic Republic of Congo
- 2019–present COVID-19 outbreak in China
- 2005 H5N1 outbreak (avian influenza) in Asia
- 2009 global H1N1 outbreak (“swine flu”)
- 1997 Asian financial crisis
- 2007/2008 food price spike

The choice of crises was limited to examples within the last 25 years that were similar to COVID-19 in their economic and social impacts on developing countries. Most are health shocks, but two economic shocks, 2008/09 food price spike and the 1997 Asian financial crisis, were included to see whether lessons can also be learned from responses to these.

Reviews focused on a) the economic and social impact of crises on agriculture, the rural economy and food systems; b) the technical responses adopted to mitigate these impacts, and; c) the *effectiveness* of these responses. The aim was to draw out lessons and recommendations that are relevant to LICs, particularly in sub-Saharan Africa and Asia.

Evidence consisted of quantitative and qualitative data, impact evaluations, peer-reviewed journal articles, books, NGO reports, case studies op-eds, newspaper articles and other grey literature. Our examination of the methods used to judge effectiveness showed, a significant evaluation deficit

and lack of systematic evidence for many, if not all, crises covered.

Evidence was collected through online searches of key words, through recommendations from key informants interviewed, and from citations within documents being read.

Key informant interviews established initial lines of enquiry, provided technical knowledge of the respective crises and filled in gaps from the literature with anecdotal evidence. A full list of documents studied is included in Annex I \*

Informants interviewed included:

Key informant	Organisation	Date interviewed
Hayley MacGregor	IDS Sussex	02/04/2020
Clive English	Development Alternatives Inc.	08/04/2020
Doug Gollin	University of Oxford	10/04/2020
Peter Bazeley	Development consultant, formerly DFID	10/04/2020
Rachel Sabates-Wheeler	IDS Sussex	11/04/2020
Tim Waites	DFID	/04/2020
Rachel Slater	University of Wolverhampton	21/04/2020
Nick Maunder	Consultant, food security	21/04/2020
Jim Woodhill	Knowledge for Development (K4D), University of Sussex	22/04/2020

The interviews were semi-structured, focussing on three open questions:

- What lessons have been learned from your experience? Lessons on (a) responses, their technical content, and (b) processes of decision-

making and implementation when time is short, and much is uncertain.

- Are these applicable to the specifics of COVID-19?
- Any highly recommended sources or persons to check?

From this information we have distilled the main findings, identified lessons and highlighted some recommendations for considering options for actions in the areas of agriculture, food systems, food and nutrition security, and rural livelihoods.

### 3. Probable impacts of COVID-19 on rural livelihoods, agriculture, food systems and food security in the developing world

#### 3.1 Nature of COVID-19 as a shock

COVID-19 is a disease that has rapid onset. The virus is highly transmissible, with an R ratio of those infected to those who become infected of 2 or more, so that infections unchecked can show exponential growth. Moreover, infections can be largely invisible, with carriers being infectious for days before they show clear symptoms of disease — and some may not present symptoms at all. The health impacts are only partly understood.

In these respects, few other health crises resemble this one. Ebola virus is similarly a viral threat, and hard to detect, but while it is more deadly, it is much less transmissible. HIV is similarly viral, hard to detect, but much less transmissible than COVID-19, and kills those infected through secondary illnesses over eight or more years.

Lessons from previous health crises and pandemics may thus not be directly relevant. Indeed, some specialists stress the differences and the risks of falsely assuming that lessons from other crises are directly applicable.

‘Every epidemic is different; government responses are usually the same regardless. Many governments apply what they think are the “lessons learned” from a previous pandemic to a new pandemic.’ [de Waal 2020]

‘In the current COVID-19 crisis, as in all crises, public policy dialogue and debate are heavily informed by history. Our instinct is to avoid repeating the mistakes of the past. But in seeking to avoid past mistakes, we risk committing new ones.’ [Eichengreen 2020]

#### 3.2 Economic impacts of COVID-19

Most of the economic impact comes from responses to the disease, rather than the disease itself. Given the high rate of transmission of the novel coronavirus, the medical imperative is to control this as quickly as possible. In the absence of mass testing of populations that would allow quarantining of infected persons, generalised restrictions on mobility and rules on keeping distance between people offer the best chance of restricting transmission. Such restrictions, however, effectively close down substantial sectors of economies, so that responses potentially have impacts as harmful as the disease itself.

Estimates of impact on overall economies see large losses of output to disease and its control, with considerable unemployment. For example, the IMF (April 17 2020) foresees real GDP in the emerging and developing economies of the world contracting by almost 1% in 2020, and by 2% if China is omitted.

More specifically, financial assets will probably fall in value, and flows of foreign direct investments to developing countries may well reverse. Commodity prices, above all those of oil, have fallen reducing export earnings of countries reliant on exporting primary commodities. Remittances from migrant workers are likely to fall, as they work and earn less. Losses on capital and current account, together with increased public spending to combat the virus, could lead to increased public debt raising the spectre of future austerity for some developing economies.

Just how badly affected the economies of the developing are affected depends on two uncertain things. One is the progress of the disease and success



in arresting its spread which will define just how long and how strict controls on movement and distancing will be. The other is the degree to which the disease, response and policies disrupt supply chains both domestically and internationally. (IMF 2020)

Much speculation surrounds just how severe the economic impact will be. On the one hand are forecasts from agencies such as UNECA (2020) which, admittedly taking the worst cases, see 3.3M dying of the disease in Africa, economies contracting by 2.6%, and 27M persons pushed into poverty. UN WIDER (Sumner et al. 2020) model potential impacts of economic contraction to produce headline figures of 420M to 580M pushed into poverty, with progress towards the Sustainable Development Goals set back by 30 years.<sup>4</sup>

On the other hand, Richard Baldwin (2020) and Jonathan Portes (2020) stress the unusual nature of the economic crisis: a simultaneous reduction in both supply and demand, without much else changing in the fundamentals of the economies of the world — this is not, for example, a re-run of the 2008 financial crisis in which massive losses had been run up by unwisely excessive lending. They thus argue that so long as capital — physical, human and the social networks that underpin supply chains across the world — is not destroyed, then economies can rebound rather quickly once restrictions on mobility are eased or removed. Capital may not be much lost during a lockdown of a few months, but were lockdowns to last for half a year or longer, then this critical assumption may not hold up.

### 3.3 Impacts of COVID-19 on rural areas of the developing world, on food systems, and on food and nutrition security

Urban areas are expected to be most vulnerable to COVID-19, owing to high population densities that

facilitate transmission; and where much economic activity lies in services and manufacturing much of which is suspended because the risks of mass infection are too high.

Rural areas, however, may differ in both the direct effects of disease and the effects of responses. Before considering these, however, considerations of how the disease may develop in rural areas reveals considerable uncertainty.

Much is unknown about the epidemiology of COVID-19 in rural areas of developing countries. Some evidence from mainland China (Verity 2020) suggests that the impacts for those under the age of 50 may be quite moderate. Most of those infected in China experienced only moderate disease. (Table 3.1)

**Table 3.1 Infections leading to hospitalisation in mainland China, 2020**

	Severe cases	All cases	Proportion of infected individuals hospitalised
0–9 years	0	13	0.00% (0.00–0.00)
10–19 years	1	50	0.0408% (0.0243–0.0832)
20–29 years	49	437	1.04% (0.622–2.13)
30–39 years	124	733	3.43% (2.04–7.00)
40–49 years	154	743	4.25% (2.53–8.68)
50–59 years	222	790	8.16% (4.86–16.7)
60–69 years	201	560	11.8% (7.01–24.0)
70–79 years	133	263	16.6% (9.87–33.8)
≥80 years	51	76	18.4% (11.0–37.6)

Proportions of infected individuals hospitalised are presented as posterior mode (95% credible interval) and are adjusted for under-ascertainment and corrected for demography. Estimates are shown to three significant figures. We assumed, based on severity classification from a UK context, that cases defined as severe would be hospitalised.

**Table 3: Estimates of the proportion of all infections that would lead to hospitalisation, obtained from a subset of cases reported in mainland China<sup>21</sup>**

Source: Verity et al. 2020

Some factors might mitigate disease in rural areas of the developing world, and in sub-Saharan Africa in particular:

numbers are published, they tend to be quoted without the necessary qualifications.

<sup>4</sup> Those statistics, however, are based on their worst-case scenario of a 20% contraction in economic output: very considerably more than the estimates of either the IMF or UNECA. As ever, once such alarming

- Rurality and lack of urban connections may delay arrival of the virus in villages. In some lightly populated areas, the R ratio of transmission may be low, and below 1, simply because rural people do not mingle frequently with outsiders.
- The young age structure of rural populations in rural Africa may mean that most of those infected will neither develop severe disease nor die.

On the other hand, other factors may aggravate impact:

- While rurality may attenuate transmission, if urban economies fail, then rural migrants may well return to their home villages and take the disease with them;
- Many people in rural Africa are malnourished; some have underlying health problems that leave them vulnerable to influenza; and some have immune systems compromised by the effects of other diseases, such as HIV/AIDS. There are also strong connections between inadequate water and sanitation, undernutrition, diarrhoea, and acute respiratory infections (ARIs). Although inadequate water and sanitation is not directly linked with all ARIs, studies indicate that malnourished children recovering from diarrhoea are unusually susceptible to pneumonia; and,
- Curative health services in rural areas are very limited. Alleviating symptoms with drugs may be difficult; putting those struggling for air on to a ventilator impossible. Hence deaths among those who develop severe conditions may be higher than seen in HICs.

## Economic and social impacts from disease to agriculture, rural economy and food systems

### Direct impacts from disease

The disease itself, for the moment not considering the effect of responses to it, can be expected to have the following impacts:

### Loss of labour on farms and in food chains

Days will be lost to people falling sick and others needing to care for them. It is possible that for most of those infected, losses will be limited to one or two weeks' absence — the time reported by survivors of COVID-19 in China and Europe.

For farming, labour loss may reduce production, but unless sickness coincides with a key moment in the season, such as planting crops, much of the labour can be rescheduled. Moreover, given the relatively frequent bouts of sickness that many African (and Asian) farmers experience, farm households are used to coping with loss of labour — so long as the sickness is short-lived and the patient recovers. Extended families, neighbours and community groups are often mobilised to help out with farm tasks when someone falls sick. Labour may additionally be hired in. This is common practice — indeed in some areas, someone in the household will be sick every month.<sup>5</sup>

For many rural households, losses of farm production to sickness may thus be quite small, depending on the length and intensity of sickness and on their resources for adapting.

How much this is possible depends on social networks and capital, and on having cash to pay labour.

Typically, chronically-poor households have weaker social ties and less cash than other households, and may thus find it difficult to cope. They are also more likely to rely on daily labour rather than on farming

<sup>5</sup> Collective assistance in villages are common, but diverse. In general, in most villages, people will not let someone in the village die hungry. At a minimum they will leave a pot of basic food outside someone's

house. Similarly, small areas will be cultivated for the old and infirm. Help with health care costs may be less common.

[Personal observations in African villages, Levine & Wiggins].



their own land for their sustenance, and to have difficulty in meeting their immediate needs if their ability to earn money is disrupted even for a few days.

For workers in the food chains, those employed in processing, transporting, storing, and retailing, similar effects can be expected. Reduced production and services may be more noticeable since it may be less possible to reschedule tasks. On the other hand, some enterprises in the food chain may be better capitalised than most farms and hence able to hire in temporary labour. That may not, however, be possible if those ill have special skills or manage substantial enterprises.

Overall, labour loss should not reduce production by much, because both farms and many (informal) enterprises in the supply chains are used to having to cope with sickness, and thus have developed arrangements to mitigate the impact of workers being sick.

### Extra work for women caring for sick

When people in households fall sick, especially the elderly, women become the main carers. Most rural women already spend long hours on whatever productive activities they have, on caring for children, and on carrying out many of the household duties of cooking and cleaning. With more care to attend, rural women are likely to be deprived of labour on their fields, for paid daily labour or in their small businesses.

How much this affects their enterprises depends heavily on how many are sick in the household and for how long. As with farming, it may be possible to reschedule work, call on families, neighbours and social groups, or to hire in labour. Again, while women in households with social ties and means may be able

to cope, women in (small) chronically-poor households with weaker social ties and few savings may struggle.<sup>6</sup>

The severity of these impacts will depend on:

- The **epidemiology of the disease**. For most of those aged under 60 years, only a small fraction may develop secondary diseases, and COVID-19 may be experienced as a short-lived illness of a couple of weeks. Impacts will, however, be uneven, since the elderly will be more vulnerable to severe illness, as will be those with other illnesses or with weakened immune systems;
- The **specific labour needs**, including the importance of timely operations, that apply to different crops and enterprises; and,
- The **resources of the household** including their social capital. Those households that lack means of all kinds, those that are chronically-poor, will find it much harder to cope than their better-resourced neighbours.

#### Box 3.1 How do the likely impacts of COVID-19 compare to those of HIV/AIDS?

It is probable that most of the direct effects of disease will be modest for COVID-19. In that, this crisis differs substantially from impact of HIV, where strong effects on the production of households with people living with HIV were observed (see Annex E, and especially Figure A in that annex).

What makes the difference is the length of disease. HIV/AIDS took eight or more years to progress from initial infection to death, with debilitating illnesses

<sup>6</sup> When adult women spend more time caring for the sick, their daughters may be taken out of school to help out with the mother's work, typically caring for younger children, cooking and cleaning. This can interrupt their schooling and may lead to abandoning school altogether. In some countries, this may expose them to additional risks of becoming pregnant (as was reportedly seen for example in Sierra

Leone during EVD) and in some situations, if they have to take up their mother's job as a street seller, girls may be more exposed to sexual harassment. In some countries, girls are either not allowed to return to school if pregnant or feel unable to do so.

making many patients bedridden in their final years. The virus took a heavy toll on the labour of the sick, as well as that of the (usually) women caring for the sick. It also left many households in near destitution as household assets were often progressively sold to pay for health care.

Moreover, while COVID-19 may threaten the elderly and leave working age populations relatively unaffected, HIV/AIDS was primarily a disease of adults in their prime years.

That said, the epidemiology of COVID-19 in rural Africa — the rate and incidence of transmission, the severity of disease — has yet to become clear.

### Impacts from responses to disease threat

If governments in the developing world respond following the guidelines from WHO and imitating the practices seen in heavily affected countries of Asia and Europe, the following measures may apply:

- Restrictions on movement, with household members told to stay at home, only to leave for essential shopping, exercise, to work for those in key occupations;
- Instructions to maintain distance between individuals other than co-residents at all times;
- Reduced public transport to avoid crowding;
- Closing down of businesses not seen as essential, including sports, entertainment, catering and hospitality, tourism services, most retailing, and almost all personal services. This may extend to manufacturing as well;
- Bans on collective worship and community ceremonies<sup>7</sup>; and,

- Bans on public gatherings, closing down sports events, cinemas, theatre, restaurants, bars and cafes.

In rural areas, these restrictions could mean that open air markets will be closed. That would threaten both some supply chains, as well as access to food for many rural households who depend on markets for at least some of their food.

Such controls may not greatly affect agricultural production directly, since farming would almost certainly be defined as a key activity, and because much farming can be done by workers keeping their distance from one another.

In agricultural and food supply chains, many enterprises may also be treated as essential and not be closed down.

Transport of produce could be affected, since in some countries smallholders use public transport to take (small) surpluses —usually of perishables — to market, and any reduction in buses and taxis may hinder such flows. On the other hand, under such conditions operators of pick-ups may step in to offer alternative transport.

It is possible that transport may be further disrupted if police and security forces barricade roads instituting stringent controls on who and what is allowed to move.

Other significant effects may also apply from lockdowns that close substantial parts of the urban economy, as follows:

- **Reduced demand from cities for higher-value farm produce** as urban households with lower incomes curtail spending on foods other than staples;
- **Return of now-unemployed rural migrants from cities.** This would be unwelcome, since

<sup>7</sup> One potential consequence of restrictions on ceremonies is that women married under these restrictions risk being accused of not

having married properly, putting their rights as divorcees or widows at risk.

they might be carriers of infection, and their remittances would be lost to the household. On the other hand, they would add to the rural labour force that could fill in for rural labour that is absent or sick. Villages with many migrants might actually see the labour force expand, although they would be the most affected by loss of remittances.

Finally, **international effects** may apply. Borders may be closed, or stricter controls exercised. Loss of passenger air transport may affect some high-value agricultural exports shipped in the holds of passenger aircraft.

It is not expected that international demand will be much affected. COVID-19 will not affect demand for cereals, oilseeds and other basic commodities. It is unlikely to have much impact on demand for beverages — tea, coffee, sugar, or chocolate. Demand for industrial raw materials, however, may fall as factories are closed, thereby affecting producers of cotton, rubber, and sisal.

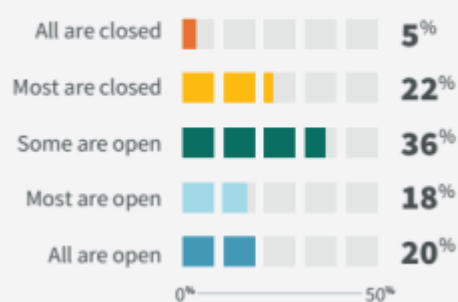
The extent of disruptions to supply chains, in transport and markets, is hard to judge; as is their impact on production and marketing. National regulations are one thing: how they may be implemented by local authorities and the police in rural areas is another. See Box 3.2.

### Box 3.2 Emerging evidence of disruptions to supply chains in sub-Saharan Africa

#### Market closures.

In early April 2020, Geopoll (2020) conducted a telephone survey of 4,800 persons across 12 countries of sub-Saharan Africa. Respondents were from both urban and rural areas. They reported market closures as follows:

### SHIFTS IN MARKET OPERABILITY



Some disruption is taking place. What is not known, is how much such closures affect the food chains and whether participants have ways to work around this, the same survey reported that some consumers had switched to buying from formal stores and supermarkets, but that is presumably largely an urban option.

A further unknown is how much local application of rules, and indeed the rules themselves, may be changed in the light of emerging evidence of impacts. Hence the rules forbidding gatherings may be implemented strictly with markets closed initially, but then relaxed if it becomes clear that local food supplies are severely disrupted. Already reports are being heard of protests against strict lockdowns.

#### Limited supply of air freight

Half of the world's air cargo travels in the holds of passenger aircraft. Since March 13 air freight rates at major airlines in Europe and the UK have shot up from about \$1.50–\$3/kg to \$6/kg. At about \$7/kg two-way it makes sense to fly empty passenger planes, which airlines are doing. Governments and larger companies have also chartered whole passenger planes.

See: [https://www.joc.com/air-cargo/idle-passenger-planes-take-mini-freighter-roles\\_20200317.html](https://www.joc.com/air-cargo/idle-passenger-planes-take-mini-freighter-roles_20200317.html)

The WFP is organising a hub-and-spoke system of air cargo routes, creating “air bridges” to take food to some of the worst-affected regions as ground transport becomes impossible in lockdowns. But these efforts are also being hampered by travel restrictions.

*In sum,*

- Much of farming and the agricultural supply chains may be only moderately affected by COVID-19;
- Impacts will be uneven. As often applies, chronically-poor rural households that lack all manner of resources, including social ties, are likely to be much harder hit than their neighbours;
- Women may see their care burden rise, with a worrying knock-on effect that teenage girls may be taken out of school, their education ended too early, and exposed to sexual harassment. Gendered effects may not be as visible as any fall in farm output, but could be considerably more harmful;
- If rural markets are closed down this could threaten both supply chains as well as access to food for rural households; and,
- Much will depend on the specific containment measures taken by different states, on the local circumstances of farming systems, and impacts on specific supply chains. Much will also depend on the largely uncertain epidemiology of COVID-19 in the rural areas of LICs and LMICs.

### Box 3.3 The view from below: What's going on in China's villages?

With so many unknowns about how the disease may affect the rural areas of the developing world, it can be instructive to learn what has taken place in rural China in the first three months of 2020.

While the attention of the international media has focused on the city of Wuhan, the initial epicentre of the COVID-19 outbreak, it is easy to forget that 60% of China's population is still classified as 'rural'. That is 840 million people, though many (over 250 million) are migrant workers, living and working in urban

areas for at least part of the year, and sending money back to rural families.

Not surprisingly, China's lockdown has had a significant impact on rural livelihoods. That is because the travel blockade and quarantine has been rolled out across urban and rural areas, hitting local employment but also the remittances that increasingly prop up rural economies. The lockdown came during the Chinese Lunar New Year, a time when migrant workers return home. Unable to go back to their jobs, and without formal employment rights, incomes stopped. Meanwhile rural residents working in the rural farm and non-farm economy have also been affected, and prevented from working beyond the village gate.

A survey of over 750 village informants spread across 19 counties in seven provinces is revealing. (Rozelle et al. 2020) While the lockdown has clearly been effective in preventing the spread of the virus, it has hit employment and incomes hard. Roughly 75% of informants had to stop work entirely; over 90% reported a loss of income; many said they were cutting down on food, even though food availability and prices remain broadly stable across China.

Adding the numbers up is also revealing. After one month of COVID-19 restrictions, China's economy lost around US\$100 billion in rural migrant worker wages alone, before factoring in losses from rural (non-migrant) employment. For rural residents, the easing of lockdown restrictions cannot come soon enough.

A final consideration concerns **timing**. Much depends on how long the disease remains a major public health threat. If, for example, major restrictions on movement and economic activity were to last for, say, three months, and then most restrictions lifted, economies as a whole, and rural economies in particular, may recover in very large part — much as harvests can rebound after a harvest lost to drought. The keys to recovery, however, are two-fold:

- One, that assets are not lost or deteriorated during the period of restrictions. Much of what matters for farming — land and livestock, tools and pumps, for example, will survive human disease if households are not forced to sell their assets; and,
- Two, socially that those who are most affected, owing either to their medical susceptibility to disease, to their poverty of assets, or to their gender, are protected from extreme and undue hardship that may lead to longer-lasting disadvantages. (see Box 3.4)

#### **Box 3.4 How bad is a crisis? Coping and resilience, hardship and distress**

When hazards strike rural societies, individuals, households, collectives and communities try to cope, sometimes successfully, sometimes unsuccessfully. Such adaptations have been extensively studied. Moreover, observing coping strategies has long been used — going back to the Indian famine codes of the nineteenth century — to measure of the degree of distress occasioned by the shock and hence the strength of the public response.

Households adapt to hazards and the risks they imply by:

- either ex ante trying to smooth their income through diversification of activities or through savings of income, livestock or food stores; or
- ex post by smoothing consumption, through
  - drawing down on savings,
  - calling in assistance from family, friends, collectives such as savings groups, and those who may have a duty to help (such as local land landlords, shopkeepers who ordinarily may exploit, but who accept a duty to ensure survival of their clients),
  - reducing consumption, and

- earning more income.

Impersonal assistance from governments, aid partners and NGOs may assist through transfers — food, cash, goats to restock, seeds, tools, etc.; or by providing more work in emergency employment schemes.

Some of these strategies involve sacrifice and hardship, things that can be tolerated for a time — even if in rural Africa the cycle of hardship may be a year or more.

When adaptations fail to cope, people may have to fall back on tactics that either push them towards destitution or impede their ability to recover from the shock, or both. Examples include

- sales of productive assets — tools, livestock especially draught animals, land;
- taking up occupations that are shameful or dangerous — commercial sex work, beggary, crime etc.;
- withdrawing children from school; and,
- providing so little food to infants that they suffer stunting.

Humanitarian workers distinguish coping and distress strategies ('negative coping strategies'). In practice, the distinction can be blurred.

Pastoralists intend to sell livestock to buy food, it is what they have livestock for. It is not distress when they sell one or two animals; but it is when whole herds and flocks are sold. Where the line lies between coping and distress is hard to draw. Moreover, it also depends on the use of proceeds of distress sales. If, for example, the funds pay to put a child through secondary school this can be considered an investment, in effect changing the portfolio of household assets, rather than distress.

The line is no clearer in other directions. Taking a child out of primary school is usually seen as distress. But forgoing secondary school or university? Since many pastoralists can't afford secondary school anyway, are they living their lives permanently in distress? If so, what does the term indicate? It loses meaning.

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Distress does not even correspond to a hierarchy of choices, as aid workers sometimes like to think. For example, Somali pastoralists will use the thatch on their huts to keep cattle alive, rather than cut out sugar in tea — that is what they call distress. Yet to an aid worker, cutting sugar should be an early coping mechanism, since it does little long-term harm. Furthermore, if money is borrowed to buy food, is that a sign of distress, suffering, or successful coping — having the capacity to take on debt for consumption smoothing?

Humanitarian workers tend to see distress whatever people do. Increased debt, for example, is usually taken as a sign that humanitarian aid is needed, even though that is precisely the purpose of credit. After a really bad drought, pastoralists in Ethiopia said it would take them two to three years to pay their increased debts. Is that successful consumption smoothing, or a terrible burden?

Sources: Bird & Shepherd 2003, Davies 1993, de Waal 1989 a and b, Goldman 1985, Gray & Kevane 1993, Kelly 1992, Kinsey et al. 1998, Pyle 1992, Swift 1993  
Personal communications, Simon Levine

## 4. Lessons and recommendations

Lessons from previous crises can be divided between those specific to responding to the consequences of COVID-19; those concerning deciding on responses and their implementation; and those about the actual forms of response.

### 4.3 Lessons specific to responding to COVID-19

#### Lesson #1 Livelihoods and food systems need to be maintained as far as possible

When epidemics hit, medical responses usually get first priority, humanitarian relief comes next, and considerations of livelihoods tend to lag behind. Livelihood impacts tend to be addressed after a delay, which can be costly to people who have few means to cope.

While choices between saving lives from the immediate emergency and allowing people to go about their normal business may involve hard decisions, in some cases measures to control disease have been implemented firmly and strictly, with limited consideration of impacts on local livelihoods. Confining farm households to their houses to prevent disease transmission as took place under Ebola, for example, makes little sense when so many farm jobs can be done with considerable distancing or lack of contact with other people.

In crises, those most affected usually prioritise their livelihoods: they give the means to live, function, and to have self-respect and dignity. These can matter

more than health or safety which are usually the priorities of outsiders.<sup>8</sup>

Moreover, some aspects of rural livelihoods are under-appreciated: for example, the importance to rural economies of informal markets and trade. Humanitarian assistance after crises sometimes harms local markets, for example by providing assistance in kind rather than in cash, thereby depressing demand in local markets for the items provided, and potentially harming local producers. Similarly, large agencies often have procurement systems that prevent local farmers and businesses from participating, thereby missing an opportunity to stimulate the local economy.<sup>9</sup>

This is not to deny that when items are unavailable in local markets, and local farms and businesses cannot supply them, then assistance should be in kind. But sometimes the choice to provide physical items is taken without regard to impacts on the local economy. For example, it is common to see relief agencies distribute seeds and tools to farming households after crises. In some cases, such as that of Ebola in West Africa, there is little evidence that this response was effective or appropriate. [Box 4.1]

#### Box 4.1 Emergency seed distributions

Emergency seed distributions aim to provide farmers with seed when stored seed has been lost and alternatives are not readily available. Typical modalities include:

- direct seed distributions;
- vouchers to buy seed from dealers;

<sup>8</sup> De Waal 1989 stresses this in his account of the 1984/85 famine in Darfur, Sudan. For the pastoralists and agro-pastoralists who bore the brunt of the famine, who had left their villages to seek work and assistance in towns, their overwhelming concern was to return to their villages and farms the moment the next rains fell, whether or not they had food, medicines or anything else that was available in the camps on the edge of the towns.

<sup>9</sup> Such opportunities can be considerable. Refugee camps in north-west Tanzania created a demand for produce from the farms of Kagera, a stimulus that notably accelerated local agriculture. [Khamaldin Mutabazi, local researcher, personal communication] Similar sourcing from local producers has been seen for refugee camps in Northeast Kenya, among other places.



- vouchers to buy seeds at fairs where sellers may include other farmers as well as dealer; and,
- cash for seed.

Direct distributions are by far the most common. Although justified as an emergency intervention, in many countries these have become standard annual programmes. They have taken place in Eastern DRC every season since 1995; in Burundi for the last 38 seasons consecutively; and have been used continually in Ethiopia for the past 42 years (SeedSystem 2020). Costs can be high: an estimated US\$15M a year in Ethiopia.

Despite the large sums spent, there is remarkably little evidence that farmers lack seeds. Very few seed security assessments have ever been conducted: it is assumed that farm households at risk of food insecurity must lack seed. In South Sudan, however, it was found that smallholders had the seed they needed: even the internally displaced had been able to find the seed needed to plant.

Similarly, hardly any studies assess the impact of emergency distributions of seed. Evaluations have claimed positive impact, but based either on beneficiary satisfaction, or by assuming the entire harvest of crops for which the seed had been given could be attributed to the seed distributed—an unlikely assumption.

Moreover, in areas where seed has not been distributed, farmers have planted. Indeed, the speed of agricultural recovery following crises of all natures is typically very rapid across affected countries, suggesting that seed is not an obstacle.

Not much consideration has been given to the modalities of seed distributions, despite the logistical costs, difficulties and time taken to distribute seed directly. Seeds often arrive too late to plant. Difficulties with targeting have been common, as expected when distributing free items.

Assessments of using vouchers to buy seed from dealers or at fairs are also hard to find.

Emergency seed distributions should only be carried out when seed availability has been assessed, rather than assumed. If there is indeed a shortage of seed, then the

range of modalities need assessing, bearing in mind that vouchers or cash can be distributed more promptly and at lower cost than physical seed. Moreover, vouchers or cash allow farmers to choose the crops and varieties they need, rather than having agencies decide this for them.

Finally, a danger exists of trying to use such emergency distributions not only to alleviate an assumed lack of seed, but also to introduce new, improved varieties to farmers. This not only complicates the exercise, but also in emergencies farmers want guaranteed yields from familiar varieties proven in their fields and conditions, rather than experimenting with novel varieties that may be not be suited to their conditions.

Sources: Awotide et al. 2013, Levine 2004, Longley 2006, Remington et al. 2002, Sperling et al. 2011, Seed System 2020.

Another aspect of livelihoods that can be overlooked is the strength of **rural-urban interactions**.

Increasingly, rural households depend on urban economies not just to sell farm surpluses, but also for employment as commuters or migrants. Some households run businesses in the agricultural supply chains, such as processing and transporting, that link village to town, or else have shops and market posts that sell consumer goods from urban areas.

Disruptions to these links can be costly. For example, in 2020 when China locked down, this trapped many migrants in their home villages, and led to the (temporary) loss of remittances that underwrote the village economy.

Livelihoods of affected populations thus need to be understood, to be protected and supported as far as reasonably possible. That implies having intelligence on what is happening at field level — see Recommendation H.

### Recommendation A Ensure farmers can maintain output

Whatever can be done to ensure to maintain farm output should be done. Consultations with district agricultural officers and local communities should



take place to devise measures that work in local farming systems, and for which experience and capacity exists [Lesson #8].

This may mean, for example, some additional physical provision of inputs such as fertiliser. It may mean making additional credit available to farmers who have access to banks. It could be payments, or vouchers, to farmers, to enable them to buy inputs, hire labour, rent tractors, etc.

In some countries, helping farmers to raise production at the next harvest would demonstrate the government's commitment to food and agriculture, allaying public fears of food shortages and high prices. [Lesson #7].

### **Recommendation B Allow rural markets to operate with modest restrictions and precautions.**

Keep rural markets functioning. Medical imperatives may require some modifications, such as installing hand washing facilities with soap, distributing masks to traders, spacing out sales pitches, increasing the number of small, local markets to avoid overcrowding and the need for people to travel, and running markets over more days, with a rota of sellers to prevent crowding. It may even be possible in some places to encourage payments by mobile money rather than banknotes. Consult with market leaders and local government to find the best way to protect traders and customers while keeping markets open.

### **Recommendation C Set up green channels for agricultural inputs, processing and marketing**

Make it crystal clear to the public and to all those engaged in crisis response, and especially those implementing disease controls, that farming and unhindered food supply is a priority. This applies above all to rules on imports, and transport of inputs and produce. Accordingly, 'green channel' priority should be given to farming and the operation of the food chains: that is, that such activity should be permitted to function with minimal hindrance.

As with allowing markets to function, it may be necessary to work with traders, transporters, industry associations and local governments to find ways to reduce disease transmission while keeping the supply chains functioning.

This does not require additional public capacity. It is a question of giving clear instructions from the leadership to civil servants, police and security forces, local government, and the public in general. Not only can green channels keep farming and food systems functioning, but they also help allay fears of food shortages [Rec. F].

### **Recommendation D Keep enterprises in food supply chain running**

With green channels [Rec. K], the businesses in trading, processing, transporting, storing, wholesaling, retailing and exporting that make up the food supply chains should be allowed to continue to function. They may still face difficulties, however, if demand for produce has collapsed — as may apply to some air-freighted export crops, for example. They then may need bridging loans or grants to allow them to conserve capital, key staff, so that they can recover when the crisis passes.

### **Recommendation E Facilitate remittances**

While remittances will fall as migrant labour is laid off, for those who continue to work and earn, making sure that remittances can still be sent is important. This may mean reducing or removing charges on mobile transactions and keeping shops and post-offices that handle physical transactions open. Keeping international flows going may prove difficult in a few countries where counter-terrorism rules restrict transactions. This can only be addressed globally by leaders and those governing the international financial system.

## **Lesson #2 Impacts of health crises are highly selective**

In pandemics a treble selection takes place. Pathogens initially select epidemiologically, infecting those exposed to them. A further selection takes place as

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infection gives rise to differing severities of disease, and for some, disability and death. Thereafter, the effects of disease vary by incomes, wealth, social class and gender. The impacts of health crises can thus be extremely uneven, more so than applies in other shocks such as drought where all farmers are affected.

This triple selection can leave some people and their households very badly affected. Those with few resources and means to cope [Lesson #9] face deep hardship and destitution, in addition to suffering from disease

Gendered effects can be hard to spot, especially by men, but are important. Women may be more affected than men because they almost always do most of the caring for the sick. Their informal enterprises may be more vulnerable to disease controls. If health facilities come under heavy pressure from a pandemic, their access to health care for themselves and their young children may be suspended, exposing them to health risks and additional work in caring for sick children. Teenage daughters may be withdrawn from school to help with additional work.

Social protection is implied: offering cash or goods to those affected by crises as a safety net is a favoured response. In principle, there are good reasons to do so: both to compensate people for their misfortune, as well as to protect assets: land, tools, livestock, health and education, the loss of which may prevent recovery.

Five lessons on safety nets arise from this review.

One, in the face of a potentially heavy loss of purchasing power and business activity, cash transfers to large numbers are indicated. In-kind assistance risks depressing demand in local markets to the detriment of local producers. The key is to maintain household ability to access the goods and services they need, and to maintain business activity. Only cash can achieve this.

Two, safety nets already in place will need expanding. A large step-up in people covered and funds distributed can only be done by simplifying some features of existing systems. Where possible, it may well be better to focus on supporting larger programmes, possibly merging programmes to simplify provision and coverage. Work conditions should be waived, as these add enormously to costs and supervision needed to run the programme.

Three, forget clever targeting. If registers of some sort already exist, even if imperfect, use these when needs are urgent. Lockdowns may make drawing up new registers even more difficult. If not, and where need is widespread, targeting can be abandoned in favour of a general entitlement in targeted areas, speeding up assistance and cutting administrative costs. This may be imperfect, but works and helps. Use registers if available: if not, forget targeting and go universal. This may apply especially if disease control, impedes the movements of field staff.

Four, expanded social safety payments arouse fears that it could lead to a continuing sense of entitlement among recipients. This resembles a longstanding, but long-disproved, fear that emergency cash transfers lead to dependency. A limited number of payments over the short term can ease unacceptable hardship — such as going without food — for vulnerable households.

Five, coordination between different systems and agencies is essential. There is no time for humanitarian agencies to reinvent wheels by re-learning lessons about social protection gained over many years. No single model for delivering cash transfers can be seen. In many cases, emergency systems will need to co-exist with state systems: this requires joint planning. This is not currently happening on the scale required.<sup>10</sup>

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<sup>10</sup> The world has to work out how to pay for this assistance, just as it did after the global financial crisis of 2008 A global fund

for social protection was already on the agenda to meet the SDGs. COVID 19 may bring new urgency to those debates.

Six, and final, social protection can divert both attention and funds from equally important social services, such as education, health and clean water. While delivering food aid and cash transfers satisfies agency needs to be seen to be making a difference, the more humdrum issues of keeping services running may be less appealing.

#### **Box 4.2 Changing ideas about social protection**

Two significant paradigm shifts in assisting people in need have been seen since most of the crises studied in this paper (see Cherrier & McCord 2020).

First, ad hoc assistance used to be provided by a largely autonomous humanitarian sector, usually through giving food in-kind (food aid). Increasingly, the sector has realised that helping households to meet their immediate needs can be met in different ways, and that in most situations, this is better done through cash transfers. Cash increases demand for goods and services in local markets, stimulating local economic activity of diverse kinds. Aid in-kind, however, tends to substitute demand, further depresses local market activity, concentrating it instead in national and international centres, in the hands of a few large suppliers who have the contracts to supply aid operations.

Second, in the past decade more and more LMICs and increasingly LICs have established social safety nets and other forms of social protection. In some cases, they provide regular and predictable grants to people identified as being in need.

##### **Unitary or parallel systems**

Increasingly the advantages of avoiding the creation of two parallel assistance systems, and instead using social protection systems to cater for the extraordinary needs created by crises — making them shock-responsive — are evident. Benefits potentially include reduced costs, greater coverage, a speedier response and result in more equity between people affected by different hazards. Moreover, social protection can encourage states to take ultimate responsibility for their citizens, albeit with international financial support.

Significant debate and analysis surrounds the question of whether to depend on existing systems alone, or to augment them with ad hoc structures to deal with emergencies. Criteria for deciding have been identified, as have a range of possibilities for what is termed 'alignment'. (Barca & O'Brien 2018) Social protection systems can expand horizontally the number of beneficiaries to help people who not previously eligible but who face extraordinary needs; or can raise the value of cash payments to respond to increased need (vertical expansion); or a combination of both

Creating a unitary system will not, however, always be either possible or desirable. In some contexts, ad hoc humanitarian systems may deliver assistance more speedily. National social protection systems may not be able to cover the whole country. Above all, expecting a young and possibly under-resourced system to handle a new and complicated challenge may harm its future functioning.

Parallel systems can piggy-back on national registers or payment systems; and can follow the same principles as national social protection systems for eligibility criteria or for payment values.

These discussions are not always well-known within the humanitarian world. Each country needs to ensure that there is a single strategy, even where this involves parallel social protection and humanitarian systems, agreed upon and followed by all actors seeking to support people's basic needs through crises.

##### **Cash or food vouchers**

In some countries, aid agencies have preferred to use food vouchers, redeemable at eligible retail outlets instead of cash. Because this tends to concentrate buying on a limited number of vendors, it carries risks during pandemics. To reduce transmission of disease, giving people cash to spend as they will is better. It is likely to encourage trade to flow to many small and dispersed outlets.

##### **Targeting**

Targeting is another key debate. In regular social protection, much concern — not least political — surrounds preventing inclusion errors, that the

undeserving receive help. In crises, however, the prime concern is with exclusion errors, that safety nets do not cover those in need. Some thus argue either for universal provision, or for targeting by vulnerability as broadly as possible (Kidd & Sibun 2020, Slater 2008).

Further reasons exist to favour inclusion: narrow targeting of the affected can stigmatise them, as happened to those living with HIV/AIDS before this error was realised. Moreover, narrow targeting can lead to unfairness, as may occur when those infected with one disease are assisted, while others suffering from other disease or disability are left out. To stigma may then be added jealousy, while local leaders disown national responses because they can see the discord it sews. In this way, programmes for the poor become poor programmes — as AK Sen once commented.

### **Recommendation F Protect and scale up existing safety nets to reach more people and if necessary, increase payments**

In the face of a potentially heavy loss of purchasing power and business activity, cash transfers to large numbers are indicated. In-kind assistance risks exacerbating the problems for markets, where they are still able to function. The key is to maintain household ability to access the goods and services they need, and to maintain business activity. Only cash can achieve this. Target broadly to prevent exclusion errors: worry less about inclusion errors. [Box 4.2]

Prioritise rural women when extending safety nets or increasing payments. Ensure that if rural girls are withdrawn from secondary school, that ways to encourage them to return after the crisis are in place.

Where no public safety nets exist, use emergency cash transfers. Although these may have to be given through humanitarian agencies, using systems parallel to those of government, procedures should be

aligned where possible. This may involve payment mechanisms, frequency of payment, possibly transfer amounts that are familiar in government systems. Each case, however, will need tailoring to national circumstances. With some alignment, emergency transfers may become the basis for a future public safety net. (O'Brien et al. 2018)

### **Lesson #3 Recovery from crisis can be strong. Agricultural output can be boosted very considerably over a season or two**

In several cases reviewed, recovery from crisis was more rapid than some observers had imagined or hoped for. Recovery from previous epidemics has been largely complete within one year.

For four of the most-affected countries by the Asian financial crisis of 1997, lost GDP and incomes were recovered within four years<sup>11</sup> — and with strongly growing economies that quickly relegated the crisis to memory. When food prices spiked in 2007–08, it was thought to be the end of low-cost cereals. Yet by the mid-2010s prices, in real terms, had indeed fallen back to the levels of the early 2000s. Controlling Ebola in rural Sierra Leone looked very difficult indeed at the depths of the crisis but was quite quickly achieved — once the initial strategy was revised. In the early 2000s, the HIV/AIDS pandemic appeared poised to cause serious economic decline and mass death in southern Africa. Economic losses occurred, as did deaths; but on nothing like the scale once feared — owing in large part to the roll out of anti-retroviral therapy (ART). And in contemporary China, the nationwide travel blockade and quarantine policy imposed in January 2020 has now been lifted in large part: people are returning to work, farmers are planting spring crops.

Only in one case, HIV/AIDS, might recovery be ascribed to something almost miraculous, namely finding effective and cheap ART. In the other cases,

advantage of export opportunities created by depreciated currencies, took time.

<sup>11</sup> Four years was fast. Real economic damage was done during the crisis: businesses went bankrupt. Restoring some of them, and otherwise switching labour and capital to new activities to take

some relatively straightforward, common-sense measures helped households and economies recover. Recovery did not depend, either, on profound reforms to economies or societies. In part that may reflect that the shocks were not necessarily the consequence of some deep-seated and generalised malaise, but were caused by just a few perturbations to the system — the emergence of potent viruses, a perfect storm of diverse and largely temporary factors for food prices, and the volatility of international capital markets.

When crises strike, they invite despondency: proffered explanations tend to see the crisis as somehow inevitable, rather than the result of processes that may be as much stochastic — a matter of chance — as determined. Such thinking invites radical responses, with more modest responses dismissed as inadequate. While the former may be desirable, they should not lead to the latter being ignored. Modest measures may be taken in the short term, to considerable effect as well; while taking more radical action over the longer run. Not immediately embarking on radical responses, which may be demanding in resources and time, also allows more consideration of the need for them. Experience shows they may not be necessary if the priority is to resolve the immediate crisis.<sup>12</sup>

Public measures to support recovery were often quite straightforward and well-known: injections of capital, variously through bank credit, small business grants, community funds, micro-finance, distribution of farm inputs; social safety nets to allow coping without loss of productive capital; redoubled commitment to provision of public goods and services in rural areas, etc. These succeeded partly because it was not just government, aid partners and NGOs who were responding, but much effort to recover was made by those affected [Lesson #9].

### Recommendation G Do not overlook modest measures, they can be effective

Faced by daunting crises, it may be felt that dramatic and radical responses are needed, such as redistribution of assets and tight controls on some markets. Experience, however, shows that more modest measures — such as cash transfers, grants and micro-finance for business, additional support to farmers, etc., are not only within the compass of existing capacity and experience, but can be effective in alleviating hardship and facilitating recovery.

## General lessons on responding to crises

### Lesson #4 Novel crises involve much uncertainty, while previous experiences of responses lack evaluation

Shocks by their very nature are unexpected. In some cases, they may be unprecedented as, for example, when new viruses replicate. Shock is palpable when threats materialise and spread rapidly, when it involves an unfamiliar mortal terror, and when the medical science and epidemiology are uncertain.

Decision-makers in such cases tend to: look for analogies, whether or not comparable cases exist; favour certain familiar framings especially if they seemingly reduce uncertainty; and listen to the views of specialists who know more about the threat, other views being marginalised. Most decision-makers try to act quickly, although as we shall see in the next lesson (#5), early responses can be wrong. They usually have to make unenviable choices, where lives, livelihoods and future lives may apparently trade off — and uncertainly so.

They are not helped because institutional memory is not what it ought to be. Responses to previous crises

volatile prices were likely in the future. By 2020, it is clear that since cereals prices sank back to their former levels, around 2014, they have been rather stable subsequently.

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<sup>12</sup> That does not necessarily imply, either, papering over the cracks of a creaking system that will then shortly lead to another crisis. Some systems are more resilient than commonly thought. In 2008/09, not only did it seem cheap cereals were a thing of the past, but also that



are commonly under-evaluated. Emergencies are usually tackled by ad hoc teams from diverse agencies — governments, NGOs, aid partners, multilateral agencies, etc. When the emergency passes, such teams are disbanded, and little remains in the institutional memory. Ideally, experiences would be evaluated, learning documented, key lessons distilled to make them ready for any subsequent crisis. This review shows most interventions are not reviewed as critically as needed: an evaluation deficit is common.

In other cases, economic shocks in particular, similar things have been seen in the past, but so long ago that memories have faded; or it is thought that conditions have changed sufficiently that nothing similar could ever happen again. This can dull reactions. For example, in the early 2000s before food prices spiked in 2007/08, grain traders and market observers watched stock-to-output ratios of cereals sink to levels they knew were dangerously low, but nothing was done. After all, the last large spike seen in cereals prices had been in 1973/74 — more than a quarter century before.

Moreover a striking finding in this review was how few lessons from fighting Ebola in DR Congo in 2008 and 2012 were applied in West Africa in 2014, and again how few lessons from West Africa were applied a few years' later when the same disease broke out again in eastern DR Congo. Almost every error of the initial Ebola response was repeated.

Not all is forgotten, however. Shocks can change the appreciation of hazards making people and agencies more prepared for them. In Bangladesh, for example, a generalised memory remains among politicians and civil servants of national traumas such as the famines of 1943 and 1974. It was this memory that ensured that the government took determined and effective measures when cereals prices spiked in 2007/08.

Ministers and civil servants were galvanised to act in concert and overcome obstacles, by the very mention of the word 'famine'.<sup>13</sup> In 2020, the remarkable response to COVID-19 by Taiwan, where few infections and deaths have occurred,<sup>14</sup> without drastic lockdowns, has been attributed to the thoroughness which the government had prepared for a potential virus crisis after their earlier brush with SARS (Pueyo 2020). Similarly, although in 2020 some countries have limited or banned exports of rice and other staples, the scale has been far less than in late 2007 and early 2008. A lesson, it seems, has been learned from that experience.

Faced by uncertainty, a priority is to invest in understanding what is happening.

### Recommendation H Invest in rapid data gathering and analysis

Collect data from the field on changes to livelihoods, markets for staple foods and other necessities, functioning of food and agricultural supply chains, an experiences of food insecurity — see Box B for detail. Use of mobile phones and digital records can facilitate collection, analysis and presentation of information promptly — ideally so that decision-makers have information on the situation that is not more than two weeks' old.

#### Information needed to assess impacts on food and nutrition security requirements

Gathering information on changes affecting populations believed to be vulnerable to food insecurity is the priority. These include urban groups in informal settlements; rural households that lack land, labour, or who live in areas of poor natural resources or in remote locations; disabled and chronically sick persons; and, in some cases, displaced groups.

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<sup>13</sup> Personal communication from a minister in cabinet at the time. He frankly admitted that public action was not always well organised in Bangladesh, but once the spectre of famine was raised, everyone worked with a common will.

<sup>14</sup> As at 19 May 2020, Taiwan had registered just 440 infections and only 7 deaths, according to the Johns Hopkins tracker site [<https://coronavirus.jhu.edu/map.html>].

Key information includes:

- **Changes to livelihoods:** impacts of disease, controls on movements and gatherings on economic activity. Agriculture is a particular concern where information is needed on access and cost of inputs, labour, freedom to move to fields or pasture, the ability to sell surpluses and changes to prices paid;
- **Markets for staple foods and other necessities:** availability of goods, changes in prices;
- **Food and agricultural supply chains.** Disruptions to markets, transport, and to trading, processing, wholesaling, retailing, exporting and other businesses in the chains; and,
- **Experiences of food insecurity:** difficulties in finding food in markets or paying for it; fear of infection when buying food.

Information may be collected promptly and at low cost through:

- Quantitative monitoring as usually already being done for either market information or food security early warning systems. Use historic records to control for seasonality; and,
- Qualitative interviews, by mobile phone, of panels of (a) of households sampled to reflect vulnerable groups; (b) farmers sampled to reflect diverse farming systems; and (c) trusted informants, selected to capture the range of traders, processors, transporters, wholesalers and exporters. Surveys can be repeated —monthly if possible — to track changes.

Collecting and collating data, analysing it and preparing it for decision-makers requires full-time staff; but probably a team of less than a dozen persons. Teams can be formed building on and working with existing groups that gather data in ministries, local government, chambers of commerce, NGOs, FEWSNET in some countries, FAO or WFP in others, FSNAU for Somalia, etc. The experience of food security early warning systems can be drawn on (Box 4.3) Additional temporary staff for increased activity

during the crisis may be seconded from the civil service or contracted from local think tanks or market research agencies.

#### **Box 4.3 Data and information: the experience of food security early warning systems**

Much experience has been gained over the last 30 or more years about **early warning of food crises and famines**, above all in sub-Saharan Africa, stimulated by the famines that took place in Ethiopia and the Horn in 1984/85. Today, the **Integrated Phase Classification (IPC)** brings together a quite remarkable amount of information, drawing on FEWSNET and GIEWS data collection, about the state of food security in hotspots across the world where food crises are most likely to happen. The IPC has become a reliable and respected source of information for governments and humanitarian agencies.

The IPC, however, is geared to deal with crises that have a relatively slow onset; where for example rains failing at planting time presage a harvest failure some five or so months later. This is distinct to a fast-breaking health crisis, where large-scale infection can occur in less than a month, and where infection can lead to death within a couple of weeks.

During the food crisis that enveloped **southern Africa in the early 2000s**, Vulnerability Assessment Committees (VAC) were established in each country to coordinate reactions. The committees brought together all national agencies concerned with response, plus aid partners and NGOs. Specialised data units, working with FEWSNET and GIEWS, using methods such as household assessments, gathered data and compiled information rapidly, producing monthly updates to facilitate action. This system provided reliable information on which consensus decisions could be taken across many agencies — where the potential for disputes was high. (Maunder & Wiggins 2006)

VACs still exist in southern Africa and in the Horn. The systems remain useful, but they are not necessarily better than they were when devised 15 or more years

ago. They could form the basis for enhanced data gathering to assist the response to COVID-19, but additional features would be needed to capture the faster-developing impacts of the virus.

Methods and data can be made open access for other researchers can examine, analyse and interpret the information. Crowdsourcing of analysis can help guard against errors and omissions

By 2020, the means to capture data in real time have multiplied, with advances in mobile phones, the internet and remote sensing. DFID and others can support data capture and experience in real time to ensure that lessons are learned and institutionalised before crisis systems unwind and information is lost. Good precedents include DFID and NERC funding the 'Understanding the impacts of the current El Niño event' research in 2015/16 to monitor the unfolding crisis across 12 affected countries.

If institutional memory is lacking, then drawing on the tacit knowledge of those with experience can help fill the gap.

**Recommendation I Find and employ persons who have worked on previous crises, who carry tacit understanding in their memory.**

Make sure that these include not only those who are specialists on the technical matter, **but also those who are specialists on local circumstances:** those who know the history of previous crises, of relations between different groups in the country and with the state, and who understand culture and politics at local levels.

**Lesson #5 Initial responses to crises have often been either ineffective, irrelevant or counter-productive**

A central dilemma in fighting epidemics is that they demand requires prompt response, but one that is both considered and tailored to national and local circumstances.

With uncertainty and unfamiliarity, it is not surprising that some responses have been ill-advised. Indeed, in almost all the cases reviewed, early reactions of many policy makers were usually ill-conceived. Pretending that HIV/AIDS could only happen to drug users and homosexuals, covering up the outbreak of SARS, deflating Asian economies when the financial crisis of 1997 broke, ignoring rural communities and imposing impossible restrictions on them when Ebola struck in the Mano River countries and later in the DR Congo — all of these were counter-productive. The tide only turned when such policies were either abandoned or outflanked by more effective measures.

Three implications follow. One, shocks need to be assessed for what they are, rather than what they resemble. Analogies can help, but simple replication of responses to previous apparently similar crises can be deceptive.

Two, framings of problems need to be broad enough to include key dimensions. Narrow framings can lead to ill-considered actions. For example, trying to deal with Ebola as though fighting a war was misconceived in West Africa, and even more ill-conceived a few years later in the DR Congo. Some responders may have been there primarily to prevent the disease spreading to other, richer countries, rather than attend to those immediately affected; but such imperatives did not help them deal with the epidemic in the DR Congo.

Three, if early responses are often not the best, then crises need to be managed adaptively and flexibly.

**Recommendation J Manage crises adaptively**

Take prompt action but be prepared to revisit and revise in the light of incoming information. Prompt information about impacts in the field becomes critical [see Rec. H]. Including specialists from across the board [see Rec I] helps avoid thinking within silos.

**Engage with communities**

Four, given both uncertainty and local specificity, responders need to engage with local communities. For reasons of principle, of respecting people and



their rights; as well for operational effectiveness, local communities, their leaders and diverse members have to be engaged. The tragic lesson from Ebola in Sierra Leone is that little was achieved while the response was directed from top down, expert-driven, with rural people treated at best as passive subjects and at worst as ignorant obstacles to the response. Once information was shared locally, and responses devised with local participation the tide turned. Not only did locals then start to cooperate with responders, but they also came up with effective ways to limit transmission.

Locals often have useful ideas on how to respond that draw on local capacities that outsiders cannot see, while being aware of difficulties in applying solutions preferred by outsiders. Rural youth may be a resource: indeed, youth may find the crisis a stimulating challenge.

A short paper from a Leonean anthropologist who worked for WHO as a front-line worker during the outbreak of Ebola, engaging with communities — her own maternal communities — in the north of the country, has several examples of how communities were engaged, and what this entailed in practice (Bah 2020). The work was painstaking, but in the end it saved lives.

A final reason to engage locally is that with disease, a common problem can be disincentives for those affected to report cases. For livestock keepers, reporting a zoonotic may result in herds and flocks being destroyed, often with inadequate compensation.<sup>15</sup> For humans, reporting infection or going to be tested has led to internment in quarantined facilities, with little or no access to family or friends. Stigma may be a deterrent to reporting outbreaks of disease.

## Recommendation K Consult and engage with local communities

Engaging with communities not only generates critical information, but also can be a resource for identifying practical responses that can work locally, that outsiders may not see. Indeed, in some crises, engaging local communities has proved key to overcoming the crisis.

Engaging with communities, rather than co-opting them, is far from simple. It requires patience, it requires making sure that all have a voice, men and women, young and old, majorities and minorities. It needs resources: intermediaries who can gain local trust but have the status to talk back to heads of responding agencies. Because it takes time, it needs to start early, rather than being added on as an afterthought.

## Lesson #6 Responses to medical crises often ignore livelihoods

When epidemics hit, medical responses almost always get first priority, humanitarian relief comes next, and considerations of livelihoods tend to lag behind. Informal economic activity tends to get very little attention at all, yet this includes much smallholder farming, trading, and the interactions of rural and urban economies. This is particularly costly, since most people vulnerable to crises — those on low incomes, who lack assets, who may have precarious health — work informally.

Disruptions to transport from countryside to town, closing down of rural and informal urban markets, can harm agriculture and rural business, leading to heavy losses of rural incomes.

Information is thus critical to understanding these impacts and to reacting to problems that arise [See Rec. H to K].

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<sup>15</sup> In the two cases of animal disease, part of the problem was absence of trusted, well-functioning veterinary extension services. In the longer run, this would be a suitable area for capacity building.

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## **Lesson #7 Demonstrate action, commitment, and adaptive decision-making**

Decision-making is not helped when some people, above all those in government, overreact to shocks. Feedback-loops that exacerbate the initial problem can be strong. Two examples arise. One is fear of disease leading to myths about its origins and causes, with people then not reporting disease or cooperating with medical responses. The other is fear that food will not be available in markets, leading to panic buying and hoarding —by individuals, companies and state agencies — that drives up prices and thereby fuelling further anxious overreactions.

Engaging with local communities [Rec. K] is one way to placate fear. Another is:

### **Recommendation L Leaders need to demonstrate action and commitment to allay undue fears and anxiety**

Prompt, visible action with clear messages can allay fears. This risks committing to action when much uncertainty prevails [Lesson #4], but is a lesser danger than fuelling public anxiety that nothing is being done: with adaptive management, actions can be revised. This imperative will tend to favour known responses, and those which are feasible.

## **Lesson #8 Effective responses depend on existing capacity and previous experience**

It is hard to respond to crises without administrative structures, procedures and staff in place. Experience defines both the range of options most likely to be considered, and those that can reasonably be implemented within the short to medium term.

For example, when in 2008, countries tried to compensate vulnerable citizens against food price rises, it was only possible to do this effectively when safety nets were already in place, systems that could be expanded to deal with the crisis.

That said, it is possible to overstretch existing systems, especially when external agencies look to channel considerable additional resources through

them. In many countries most of concern to DFID, social protection may be young, offering only partial coverage of the country. Systems may not have the capacity to take on both an additional large caseload, as well as the very different ways of working needed to be responsive to a shock.

This point is further considered in the section on social protection.

### **Recommendation M Favour feasible responses**

Appreciate existing capacity and experience. If necessary, recruit back those with experience who have left agencies to where they could be useful [Rec. B]. Avoid the temptation to try to do things that strain existing capacity: such interventions may be promising, but if badly implemented, they will fail.

This does not preclude some innovation that may be possible within existing capacity and experience; but in assessing innovations, due regard needs to be given to capacity and experience.

## **Lesson #9 In most crises, most response comes from local coping**

A recurring lesson from shocks of all kinds in rural areas of LICs, is that the bulk of coping with the shock comes from the resources of individuals, households, extended families, neighbours and local groups.

Aid from outside the local sphere is often delayed, with crisis conditions receding just as support arrives — usually the case with food aid. It may also be a blunt instrument not well tuned to the circumstances of those affected locally, nor accurately targeted to those in need — see the next section for the difficulties of targeting. At worst, outside aid may even be seen as threatening as with food aid in Sierra Leone which some recipients believed to be a vector of Ebola.

At least three implications follow from this. One is the broad reflection that resilience, being prepared for hazards, is worth more than after-the-event assistance. That does not help with immediate response, but it matters for longer-term public action.

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Another is that when local response is so important, then public action should work to support favoured coping strategies, where legal and ethical; and at very least public responses should not stymie such self-help.

A third, uncomfortable reflection is that coping will be socially unequal: while some households have the resources, including social ties, to cope; others, and often the chronically-poor and disadvantaged, lack these means. Finding ways to give them special assistance should be a priority.

### **Recommendation N provide external assistance that complements and facilitates local responses**

**Respond early.** Cash payments are much quicker than food: they can often be organised in days, plus the time to register intended recipients — as Kenya's National Drought Management Authority (NDMA) does when satellite images confirm a drought.

**Preparedness is all:** be ready to respond if needed. The first stage is contingency planning: this review may contribute to that. making sure that things that ought to have been done anyway are actually done. Usually, this refers to public services, such as repairing wells, vaccinating children and animals etc

**Being on time needs defining.** This is rarely done. Most aid works on the principle 'as soon as I can' and not 'by an agreed deadline'. That is why so many seed distributions arrive too late to be useful. Contracts should be made conditional on meeting deadlines defined by when aid would still be timely.

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# Annexes



## A. Responses, effectiveness and lessons summarised

Cells shaded in lemon are responses not central to concerns over agriculture, rural livelihoods and food and nutrition security

Cells shared in light green refer to decision-making and implementation.

Responses	Effectiveness	Lessons
<a href="#">Ebola epidemic, West Africa, 2013–15</a>	As a disease and an epidemic, EVD is quite different from COVID-19: it is more deadly and creates a greater degree of fear, but is less transmissible, and more easily contained, as there was no transmission from asymptomatic carriers. However, as a crisis, the EVD epidemic has many similarities to the expected COVID-19 crisis. Control measures will cause major disruption of trade and economic activities, leading indirectly to household food insecurity. The most vulnerable to food insecurity may be the urban poor working in the informal economy.	
<b><i>General and medical</i></b> Non-food security interventions had huge ramifications for food security and agriculture, both because of their indirect impacts and because the food security was shaped by the length of the epidemic more than by number of casualties. Safe burials	Initially, was problematic, but later in epidemic it was much more successful. When done well, highly effective. Critical in epidemic control. Earlier, when done insensitively, caused some hostility and increased stigma. Burials are a crucial part of life in many societies so compliance was difficult when badly done, including impacts on food security due to nature of social networks, extended family and land rights claims. When burial staff were not treated well or were left unpaid, some abandoned bodies with grave public health dangers. Effective when done well	Lessons on the dangers of a top-down approach to creating behaviour change are critical for all dimensions of epidemic response. Given the links between epidemic control and curtailment of economic activity, it is essential to learn the lesson that engaging communities to find behaviours that responded both to people's needs and to the demands of public health was not only less damaging but also far more effective in epidemic control. This lesson had been learned in previous EVD outbreaks in other countries.
Public health messages	Initially top-down and ineffective when carried out by distant officials. Effectiveness was limited partly by inherent mistrust in government in three most-affected countries. Messaging became more effective several months into the epidemic with greater community engagement. When encouraged to do so, some groups, e.g. youth groups, became active messengers of public health messages.	Need to involve communities as active messengers, not just as recipients of messages and directions. This worked when it involved sub-groups within the communities, and not just the those identified as village leaders. Different groups (e.g. by age, by sex) responded to different messaging; and to messaging from people they identified with.

	Use of religious leaders to pass on messages, including providing disinfection kits in places of worship was reportedly effective	Messages themselves needed to be tailored to the audience to find different ways of meeting the same overall objective of reducing physical contacts that spread disease.
Contact tracing, isolation and quarantining communities	<p>Contact tracing and isolation proved problematic initially, partly for reasons similar to those discussed above (safe burials). Stigma, and fear of stigma, were a huge barrier and disincentive to self-reporting. People were unwilling to identify as potentially infected if they did not have trust in the system and trust that they would be supported.</p> <p>Although many quarantined people were given food rations, for the first months there were difficulties in guaranteeing this. Compliance was weakened where the immediate needs of the quarantined families and communities were not catered for, leading to escapes and risk of further spread of the disease. Insufficient food supply was a significant driver behind social unrest in West Point, Monrovia.</p> <p>This paper does not discuss the public health impact of contact tracing/isolation or quarantining communities.</p> <p>Effective when done well</p>	<p>Voluntary cooperation and community self-enforcement will be essential. This requires a system for guaranteeing that needs will be met for those quarantined before implementing the strategy. Links between support to this specific group of people and social protection systems will need to be examined in each country. Where cash is the medium for SP, people would still access to shops/markets to buy their necessities, unless some form of support for making purchases is organised (as is being done with much success in UK). Whether or not SP systems have the bureaucratic capacity to deal with additional and rapidly changing caseloads of people who need almost immediate pay-outs, possibly of values different from those normally transferred, will need to be decided on a country by case country basis, and on practical rather than ideological grounds. If parallel systems are needed, these can still be aligned with SP in many ways.</p> <p>It is beyond the scope of this paper to draw epidemiological lessons on the efficacy of community quarantine for control of disease transmission. Blanket quarantines should probably be avoided where possible.</p>
Border closures	These were probably effective in limiting spread of EVD beyond 3 countries, although the spread to Sierra Leone took place after and despite the border being closed.	The hardship caused by preventing cross-border trade was immense. Where possible, control on movement of population should try to curtail the movement of trade as

	<p>The disruption on trade was immense, leading to steep rises in food prices, especially in border communities. Trade routes adapted (e.g. to Mali), but more trade to border areas went through capital cities rather than directly from neighbouring countries. Impact of this on local livelihoods has not been documented.</p> <p>Probably effective at reducing spread; damaging to livelihoods when trade also curtailed</p>	<p>little as possible. It currently appears that countries seem determined to keep borders open for goods, if not for people. Lessons on the impacts of border closures on trade and the economy may therefore not be relevant to COVID-19.</p> <p>If trade disruptions do occur, or if protectionism leads countries to ban the exports of essential items, the livelihood and food security impacts will need rapid investigation.</p> <p>During the crisis, it will be necessary to monitor markets in border areas, and to monitor trade routes and not only the volumes supplied in the final markets in major cities.</p>
<p><b>Food security and agriculture</b></p> <p>Food aid and cash assistance for households/communities in isolation/quarantine</p>	<p>There were implementation difficulties, especially in first months.</p> <p>Later in the crisis, implementation was improved, and food aid pipelines proved adaptable.</p> <p>Food assistance was highly necessary for recipients and made quarantine possible.</p> <p>No assessment has been done as to the comparative benefits or value for money of providing food assistance in-kind or in cash.</p> <p>Effective when successfully implemented. Effectiveness of different food assistance support modalities unknown</p>	<p>Assistance will be needed for many households in self-isolation Mechanisms need to be established quickly to ensure that this can take place smoothly.</p> <p>In the years since EVD, cash has become the default modality for transfers for food security. Since EVD is unlikely to have a major impact on food production, cash should be an appropriate food assistance modality in most situations. Guidelines exist for making and evaluating such decisions.</p> <p>SP was largely unavailable as a mechanism for providing support during EVD. That is no longer the cases in many countries. One of the most critical questions in providing support will be the decision on how far to expect SP systems to be shock responsive and to take on additional needs, or, if not, how and how far to align ad hoc systems with SP (<i>see above, contact tracing...</i>). Significant literature on this topic exists</p>

<p>Cash transfers, other than to support quarantined households</p>	<p>Livelihood support began relatively late in the EVD epidemic.</p> <p>Given loss of household income for so many, generally accepted that cash transfers were important in maintaining households' ability to meet their basic needs.</p> <p>Some support was also given in kind. However, recipients almost always preferred cash transfers over food aid.</p> <p>No studies document the impact of in-kind assistance on markets and the local economy.</p> <p>Impacts of transfers have not been well studied, e.g. with controls or with a rigorous qualitative methodology. Some evidence that households receiving transfers had better diet and less hunger as a result.</p> <p>Cash transfers after EVD are reported to have stimulated an increase in local trade and savings groups (but, again, studies had no controls).</p> <p>Targeting was problematic, with high inclusion error (estimated based on subjective observation by one study at around 25%). There was also significant exclusion error found in one study. This has not been well studied. Most implementing agencies believed that they were highly successful in targeting the most vulnerable.</p> <p>Effectiveness not known, but probably high; effectiveness and wider impacts of different food assistance modalities not known.</p>	<p>It is hard to argue against the need for huge cash intervention if measures taken to mitigate and control the spread of COVID-19 cause disruption to the informal economy. A household transfer is likely to be needed by many, and cash is likely to be the preferred modality — except where markets are shown not to be able to function, even where demand would exist, or where there are restrictions on movement prevent people in isolation from accessing markets or shops.</p> <p>Measures will probably be needed to support the continuation of business. In-kind assistance is likely to further suppress market demand and thus further depress economic activity.</p> <p>The need for cash assistance to cover household needs will need to be established case by case. For example, if agricultural production is not disturbed, rural households may be less in need. This will depend on many factors such as how far agricultural production is of food crops or cash crops, how far markets continue to operate normally, how far the social organisation of agricultural labour is disturbed, etc.</p> <p>It will be important not to leave cash assistance late (as happened in the case study) but to prepare for a rapid mitigation of hardships, if they arise. This means having systems to collect and analyse information in real time.</p> <p>In some countries, social protection systems may be used to deliver transfers. Care will be needing in assessing the ability of existing systems to continue to operate under a COVID-19, and to take on board an additional caseload at a time when</p>
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		<p>there may be severe restriction on the movement of staff working to implement the social protection system.</p> <p>Targeting criteria in EVD included those affected directly by Ebola and the general category of 'vulnerable' households. The impacts of COVID-19 may not be felt most by those normally considered vulnerable, so targeting may be even harder than normal.</p>
Cash grants to village cooperatives, savings organisations.	<p>Little information on impact of grants to pre-existing village organisations.</p> <p>Reasonable to believe that such interventions may well have assisted in both economic and social recovery. One evaluation of 9 villages showed household cash grants increased the number of savings groups in the targeted villages, but these quickly fell back down to pre-EVD levels, suggesting the number of organisations and the volume of savings/credit is determined by wider economic factors in the local economy.</p> <p>There is no documented evidence of the impacts of establishing new groups (savings, trading, producer) on the speed or extent of recover or in the medium-term.</p> <p>No documented information about who benefited and who was excluded by different ways of injecting cash into the rural economy.</p> <p>Effectiveness not known</p>	<p>Recapitalising a rural economy by supporting existing village economic structures such as VSLA/savings coops, rather than just through household handouts makes sense, both for immediate stimulus to village economy and also to re-stimulate social structures.</p> <p>The appropriateness of such interventions will depend very much on the context, and so should be based on a sociologically-informed study.</p> <p>Considering the widespread use of these aid instruments, the lack of attention to learning lessons about impact is concerning. The attention of those implementing interventions is understandably on trying to assist in in the immediate crisis, but investment in learning about what works and how, including in the medium-term should not be neglected. Donors and implementing organisations should discuss in advance ways to achieve this which do not detract from attention to the quality and speed of implementation.</p>
<b>Agricultural support</b> Seed distribution	These were implemented and financed by many agencies.	The ubiquity of such programming without the evidence that it is needed suggests that this is an automatic or default response for agencies wishing to support agricultural

	<p>Very little evidence beyond the highly anecdotal that planting material was in short supply or hard to access for most farmers. If the constraint was the financial cost of buying seeds, projects do not document the rationale for preferring an in-kind distribution over a cash or credit intervention. Information is lacking on the crops/varieties distributed or the rationale for this choice.</p> <p>No documented evidence that yields were improved or that household income went up as a result of the distributions, as no assessment of impact is available.</p> <p>Harvests were generally good. Although seed distributions reached a minority of households, there are no documented reports that harvests for some were limited by the availability of planting material.</p> <p>Nothing has been documented about the impact of in-kind distributions of inputs on supply chains for agricultural inputs (private sector suppliers). This possibility is not discussed in project documentation publicly available.</p> <p>One evaluation of a small vegetable seed distribution found that seeds arrived late, causing late planting and loss to grasshoppers. Most groups did not then keep seed for following season.</p> <p>Effectiveness not known</p>	<p>production. Approaches for assessing the accessibility of planting material and for determining ways to support agricultural production if support is needed were established many years ago but rarely used.</p> <p>Over the last 15 years, there has been an increasing understanding in the humanitarian sector of the need to separate the discussion on whether or not people needed assistance to meet their immediate consumption needs (including food) and how that support should best be give (in-kind food aid, cash grants, market systems support, etc.) That discussion is not yet taking place regarding production inputs (seeds, tools, livestock, fodder, etc.) It is urgently needed, as the majority of humanitarian support for agricultural production and rural recovery is based on little or no evidence of impact (including unintended impacts) and even less analysis that it is being delivered in the right modality.</p> <p>In-kind distributions of seeds are unlikely to be cost-effective, where market mechanisms are functioning.</p> <p>Given the diversity of farming conditions and the diversity of socio-economic conditions that farmers live in, there may also be questions about the ability of a centralised approach to the selection of seeds to be distributed, rather than supporting each farmer to choose their own selection of crops, varieties and the quality of planting material that they need.</p> <p>Given the time-critical nature of crop sowing/planting, care is needed before committing to a large logistical operation of in-</p>
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		kind distributions, where the inputs needed can be found by farmers through markets or informal channels.
Overall livelihood and recovery support, including agricultural extension, usually through farmer groups	<p>This intervention is not clearly related to the EVD crisis. No studies of impact were available.</p> <p>There is no documented information on any lasting improvements brought to the farmers knowledge systems: that is their links to permanent extension services, research, other farming networks, peer to peer learning structures, etc.</p>	<p>Recovery across the 3 countries was fast and widespread. There is little evidence that humanitarian/recovery interventions were necessary to achieve a rapid return to a basic level of economic activity.</p> <p>There is no obvious reason to include interventions for the longer-term development of the productivity of the agricultural sector or rural economy as a whole as short term, ad hoc, recovery interventions. There is also no obvious reason to believe that such development impact is best achieved through humanitarian programming.</p>
	<p>See <i>EVD Summary</i> for note on context: recovery was very fast.</p> <p>Harvests were generally good in 2015/16, and informal economy returned as soon as there was effective demand.</p> <p>Range of support measures was quite small and largely generic. Not much was tailored specifically to the (unique?) sets of problems posed by EVD.</p> <p>Effectiveness not known</p>	<p>These kinds of interventions to support recovery are common across a wide range of crises and countries. It is unclear how well they are based on an understanding and analysis of the contexts in which they are used.</p> <p>The lack of rigorous impact studies makes it still difficult to draw many lessons about how best to support populations emerging from crisis. This situation is inexcusable, given the long history of recovery interventions. See above, <i>cash grants</i>.</p> <p>Can we do better this time?</p>
<b>Support to women</b> Women's centres	<p>A study of one project found a positive impact on out-of-wedlock pregnancy, school drop-out and use of transactional sex.</p> <p>Evaluations of the humanitarian response generally found that gender programming was weak/ This project was an exception in directly addressing the objective of women's and girls' empowerment.</p>	<p>The impact of this intervention was specific to the particular cultural context where it took place so direct lessons cannot be simply copied for other countries. However, it does offer a more general lesson, that</p>

	Effective.	<p>Gender programming was too often about including a certain percentage of female beneficiaries in the same programme. This does not have to be so.</p> <p>Providing women and girls with spaces and forums to engage in discussions about their lives can have positive and tangible impacts on their lives</p>
<b>Ebola Virus Disease, DRC</b>	While the disease itself is very different, the response to the disease has generated lessons relevant to COVID-19. Firstly, community involvement and trust are absolutely essential if an epidemic is to be quashed. Secondly, care must be taken not to cause further damage to social structures, health care systems, and livelihood strategies through control measures.	
Aggressive, bio-security approach to the disease, including quarantine, EVD treatment centres, rapid and safe burials.	Counter-productive, as it resulted in a great deal of community resistance.	Any intervention that leaves the impression that the response serves to protect the rest of the world (especially the rich world), rather than to care for the local community will engender resistance.
Social distancing and quarantine	Unclear how much impact this had on disease transmission. However, detrimental side effects were reported, including significant increases in child malnutrition likely to be largely due to response efforts, given that only a small percentage of the population were infected with EVD.	<p>Households quarantining must be supplied with adequate food supplies for the period of quarantine and any time it may take to rebuild livelihoods.</p> <p>Include child nutrition interventions.</p>
Taking confirmed cases to specialist treatment centres	Largely counter-productive as symptomatic patients became reluctant to seek treatment, meaning they infected more people and their chance of survival decreased markedly.	<p>Build trust with patients by ensuring that they understand the process and provide them with treatment options.</p> <p>Ensure that specialist centres allow for patients to be visited by family.</p>

		Provide food aid or cash assistance to family members who have lost the labour of a household member or have incurred additional costs due to illness.
Border closures between DRC and Uganda, Rwanda, Burundi	Cross-border travel increased, as people sought to escape the quarantined areas.	Ensure that communities are well-looked after and are willing to work with the response effort, otherwise they will seek to escape to where they feel safer.
Triage of all patients for EVD	Gradual reduction in hospital transmissions, but at the cost of reduced maternity services (EVD and early pregnancy complications have very similar symptoms, meaning that women often had to wait for EVD screening results before treatment).	Reduce time for screening tests to ensure pregnant women can receive urgent maternity care.  Provide safe spaces for those awaiting results to avoid transmission in health centres.
Vaccination of willing health care workers	Vaccines significantly reduced deaths among vaccinated health workers.	Given experimental nature of vaccine, many chose not to be vaccinated so 13% of deaths were still among medical staff. Need to provide other forms of protection.  Traditional healers should be included among health workers as these are often the first care workers patients visit. This would assist in winning trust and ensuring a community-led response.
Vaccination of those who had come into contact with a confirmed EVD case	Limited effectiveness due to difficulty in identifying/remembering and tracing all contacts.	A more systematic vaccination campaign would be more effective.  Provision of more routine vaccines during non-crisis times would help prevent suspicion towards vaccines.
Removing the deceased from their communities as quickly as possible, in some cases	Counter-productive as it built mistrust and community resistance.	Train community volunteers in safe but respectful burial rituals.  Involve religious and community leaders in educating the community on new rituals.

with involvement of security forces.		Provide psychosocial support to the bereaved.
Employing local young men in response to increase community involvement and address loss of employment opportunities.	Mixed results: did provide some cash for households and communities but increased inter-generational conflict within communities and excluded women.	Provide employment opportunities to women, who may be carrying a disproportionate burden in any pandemic.  Involve community elders in response activities to prevent inter-generational conflict.
Absence of gender-specific responses.	Increased poverty, reduced health care, and increased psychosocial burden for women	Ensure provision of health care continues as women use services more, particularly sexual and reproductive health services.  Provide food or cash transfers to women caring for relatives or those unable to continue income-generating activities.
<b>HIV/AIDS, 1981 onwards</b>		
Medical: Prevent transmission; ART	Initially efforts to limit transmission ran into obstacles such as moral and religious objections to use of condoms, or even to mentioning sexual matters. Same applied to clean needles for those injecting drugs.  With time, however, objections weakened, messages were passed along more openly, and some apparent success in limiting transmission.  ART, initially feared to be unaffordable for those on low incomes has come to be rolled out on a large-scale, owing cheaper drugs and public funding of costs. For most of those covered by ART, this has much limited or halted the progress of AIDS.	See below under 'decision-making': it took long to persuade some leaders that HIV/AIDS was a medical problem that unevenly affected individuals and society, and that those affected deserved help and treatment as a right.
Social protection  Social protection for people living with HIV/AIDS tried first and foremost to defend	<b>Cash transfers:</b> Social pensions paid to the elderly particularly appropriate because fungible, allowed recipients to pass benefits to other household members. Pensions in South Africa often used to pay for children's schooling. Enable households to buy medicines.	Cash transfers require transparency, accountability and financial and administrative capacity on part of governments, otherwise are subject to elite capture.

<p>the consumption of vulnerable people, to prevent them slipping into deep poverty, and to prevent them from either selling productive assets or resorting to work that would have been dangerous, criminal or degrading — commercial sex work being a particular concern.</p> <p>Beyond this, some measures tried to help households that had labour to produce more and enhance their livelihoods in the face of a disease that tended to undermine those livelihoods.</p>	<p>Child-headed households may not have the capacity to make good decisions about expenditure, though orphan allowances paid to households may encourage and strengthen community-based care of orphans.</p> <p>Often effective</p> <p>Food and nutrition: Viable long-term safety net for households severely labour constrained unable to work. For households with labour, danger of creating dependency. Costly to transport food.</p> <p>Effective for very poor, without labour</p> <p>Farm inputs: seed and fertiliser, useful for households with labour. Significantly cheaper than importing food aid; especially in landlocked countries</p> <p>Partly effective</p> <p>School feeding: encouraged enrolment and reduced dropouts, but unlikely to be sufficient incentive to severely labour-constrained households, particularly child-headed households, to attend school. Take-home rations can support orphans and vulnerable children (OVC) and their households</p> <p>Partly effective</p> <p>Public Works Programmes: Cash For Work &amp; Food For Work. Can be self-targeting, for example when inferior staple foods or lower wages are paid. Appropriate for HIV-positive but asymptomatic people, but only if they have a healthy diet. Since this is unlikely, FFW and CFW can be counter-productive and inappropriate for labour-constrained households, i.e. those containing people with AIDS and OVC</p> <p>Partly effective</p>	<p>Need to differentiate circumstances of households, above all between those with labour and those lacking labour.</p> <p>When targeting households to for assistance, better to target broadly for all and any households that are vulnerable to deep poverty and destitution, rather than just those living with HIV/AIDS. Singling out households affected by HIV/AIDS risked stigmatising them</p> <p>Take care that spending on social protection does not deprive health and education of funding since these services matter for most households living with HIV/AIDS.</p>
<p>Diverse actions: individuals, families, communities</p>	<p>Varied: dependent on all manner of circumstances, including the prior resources of the individual and their household, and the degree of secondary illnesses/stage of AIDS. Some actions were coping, others were distress — such as asset sales</p>	<p>In most crises in rural area of LICs, those affected have to rely very heavily on their own ability to cope. If any effective outside help comes it will usually be (a) delayed,</p>

	Partly effective	and (b) may come in forms that are not that well suited to the affected individuals.
Rights	HIV/AIDS revealed how widows could lose their land. Led to efforts to protect rights of widows and all women to land, thereby contributing to greater gender equality  Effectiveness not known	The crisis encouraged reforms at community and national level to address issues of rights, above all those of women.
Decision-making and implementation	Initially, causes of the disease were uncertain and highly sensitive, with much stigma attached to disease and those living with it. A combination of scientific ignorance with moral judgments about drug users, homosexuals and the promiscuous impeded clear debate and action.  Much advocacy needed before it came to be treated as a disease, with those affected treated with respect.	Perceptions of crises matter. The more alarming the problem, the less is understood about its causes and treatment, the harder it can be to summon support for remedial action.  With more understanding, crises appear more manageable, since specific ways to address components of problem become clearer.
Food price spike, 2007/08–c2014		
Prevent prices rising on domestic markets: <ul style="list-style-type: none"><li>• ban exports, import more</li></ul>	Exacerbated spike in prices on world markets. Some effectiveness in limiting domestic price rises  Effective nationally, counter-productive internationally	Prompted thinking about how best to prevent overreactions that prompt others to imitate. Hard to control export bans — even if WTO mandated to prevent them, hard to implement — and even less to prevent anxiety-driven over-stocking.  Providing reliable information on stocks and supplies can mitigate over-reaction.
<ul style="list-style-type: none"><li>• release stocks, subsidise cost food,</li></ul>	Much depended in intensity of measure: with enough resources, relatively easy to contain prices rises  Effective, but costly, require prior stocks or funds	MICs had capacity to consider such measures, while LICs almost always lacked resources
<ul style="list-style-type: none"><li>• impose price ceilings</li></ul>	Difficult to enforce, likely to lead to parallel markets	



	Usually ineffective, potentially counterproductive	
Stimulate production through public distribution of inputs, subsidies on inputs	<p>Inputs were delivered but many arrived after the first half of 2008, when crops were planted in the Northern Hemisphere.</p> <p>In following years, strong response in much higher cereals production in Africa and Asia, mainly coming from countries where smallholder predominate</p> <p>Highly effective in medium term</p>	When these programmes began, much scepticism from observers over whether smallholders who supposedly faced many limitations to raise production could take advantage of inputs and higher prices. Response from smallholders, however, was strong.
Social protection for those on low incomes, vulnerable to higher-cost of food	<p><b>Safety nets were often delayed:</b> most got going by late 2008 and early 2009, when prices had been high for some months.</p> <p>Some reportedly suffered from implementers' capacity constraints, overly complex targeting, and insufficient attention to women. Not enough consideration of effectiveness of implementing different safety nets, such cash transfers, public works employment, food aid, etc.</p> <p>Effectiveness varied</p> <p>Often school feeding was the focus because, unlike more sophisticated social protection, this already existed in many low-income countries and could be scaled up relatively quickly. Protected school-age children, but not infants.</p> <p>Partly effective</p>	Required schemes to be in place, with agency able to distribute funds or food, with register of households likely to be vulnerable
Coping and distress by affected individuals, households	<p>Most surveys report that not many vulnerable households received assistance from state during the price spike. Despite considerable public efforts, for most threatened households it was their own ability to cope that mattered.</p> <p>Effective for households with savings, other assets, working adults, good social networks — and where rural economy had diverse potential for alternative work</p>	Resilience and ability to cope of households was important in avoiding serious harm to individual welfare from the price spike.
Decision-making	International response focused on boosting supply, providing social protection, and providing more information. In retrospect these were largely appropriate	While crises require prompt responses, they also require considered ones. In the first 6 months of the spike,

	National responses varied. In some cases, ineffective or counter-productive measures were taken — export bans, price controls; in part, since leaders needed to be seen to act.	overreactions were evident — export bans, stockpiling in tight markets.
Asian financial crisis, 1997–c 2002		
<p>Macroeconomic:</p> <ul style="list-style-type: none"> <li>Monetary and deflationary</li> </ul>	<p>IMF orthodoxy: raising interest rates, reducing public sector deficits through reduced public spending.</p> <p>Led to business closures, unemployment lower wages.</p> <p>Aggravated hardship.</p> <p>Counter-productive</p>	<p>Do not depend on the IMF. It was too wedded to its own ideas to pay attention to the specifics of the crisis facing the different countries</p> <p>Think ahead: liberalisation of trade and capital accounts may be fine in principle, but has its dangers — especially in capital markets, where herd instincts may be strong, where international investors may suddenly withdraw their funds.</p>
<ul style="list-style-type: none"> <li>Stimulate economic recovery</li> </ul>	<p><b>Providing support for small and informal businesses in credits and grants.</b></p> <p>Malaysia: Amanah Ikhtiar Malaysia (AIM) revolving fund, RM300 million in interest-free loans to retrenched workers were disbursed.</p> <p>Effective: 100% repayment of loans.</p> <p>Yayasan Tekun Nasional entrepreneurial loans scheme, the Graduate Entrepreneurs Scheme, and the Economic Business Group Fund, which provides assistance to women entrepreneurs — all directed to improve entrepreneurship in informal sector</p> <p>Effective in stimulating enterprise</p> <p><b>Thailand:</b> Unemployment Mitigation Program (1998) included innovations such as the “Thai help Thai” social protection, provisions for job creation, repatriation of workers, promotion of Thai workers working abroad, and employment of university graduates.</p> <p>Effectiveness not known</p> <p><b>Indonesia:</b> Revolving-credit schemes (PDM-DKE)</p>	<p>Speed of recovery from what seemed in 1998 an acute crisis was relatively rapid: within 3–4 years in most countries, lost GDP was recovered and previous rapid growth was restored — owing in part to strong exports benefitting from depreciated exchange rates.</p> <p>Loans and grants for businesses in these four countries — Korea apparently did not do anything similar — were more often successful than not, but much depended on existing organisations such as Philippines’ micro-finance agencies, and the experience of the country.</p>

	<p>Ineffective: criticised for being prone to corruption and cronyism</p> <p>Philippines: credit for livelihoods through existing micro-finance organisations</p> <p>Effective: microcredit helped ameliorate poverty. Community engagement, effective coordination with state.</p>	
<p>Social safety nets, social protection</p> <ul style="list-style-type: none"> <li>Unemployment benefit, health care for workers: universal benefits</li> </ul>	<p><b>Korea:</b> faced by bankrupt businesses, unemployment insurance extended to all of labour force. Universal coverage.</p> <p>Effective: crisis saw much greater protection for workers</p> <p><b>Malaysia:</b> Employee Provident Fund was flexible, allowed more funds to cover rising cost of housing.</p> <p>Effective</p> <p>Employment Acts protected against dismissal</p> <p>Effective: unemployment rose by just 3.2% at most during crisis</p> <p><b>Thailand:</b> Labor Protection Act (1998—post-crisis) provided limited unemployment benefits for non-government employers and employees</p> <p>Probably effective</p> <p>Post-crisis, created universal health care cover. Voluntary and Low-Income Health Cards, though expensive, believed to have facilitated delivery of basic services in remote regions.</p> <p>Effective, but costly</p>	<p>Richest countries in region had means to extend universal benefits to workers, in some cases covering informal workers. Generally effective in protecting jobs and incomes, ensuring health care, but costly.</p>
<ul style="list-style-type: none"> <li>Safety nets: public works programmes, cash transfers</li> </ul>	<p><b>Korea:</b> Temporary Livelihood Protection Program (TLPP) to absorb the newly unemployed, covering an additional 310,000 persons: direct cash transfer (\$70/month), tuition fee waiver and lunch subsidies for school-aged children, and 5% reduction in medical insurance premiums for one year. Have to participate in public works and job training.</p>	<p>Much of what was done depended on prior organisation and experience that could be scaled up. Where safety nets were not in place, it was hard to set them up — Indonesia.</p>

	<p>Effective: elements made permanent in 2000 Minimum Living Standards Security Act.</p> <p><b>Malaysia:</b> Expansion of existing safety nets to cover retrenched workers entering the informal sector. Also had informal safety nets along ethnic lines to compensate for the low level of coverage of the formal safety nets</p> <p>Probably effective</p> <p><b>Thailand:</b> main efforts through community support, see below</p> <p><b>Indonesia:</b> Public works program (Padat Karya) had wage rates were set above the minimum wage, creating distortions and diverting labour away from other sectors like harvesting food crops.</p> <p>Partly effective</p> <p><b>Philippines:</b> Public employment. Food for Work suffered from overlap of seasonal timing in agricultural harvesting, planting and cultivation, insufficient funds, and a bad law-and-order situation. Rural roads programs found to be gender insensitive.</p> <p>Partly effective</p>	<p>Where countries knew about micro-finance, such as the Philippines, this was a channel to help small businesses in distress.</p> <p>In countries such as Thailand with all manner of NGOs and community organisations, these could be used to channel assistance to localised communities.</p>
<ul style="list-style-type: none"> <li>Grants and credits to community organisations to ameliorate local conditions</li> </ul>	<p><b>Thailand:</b> NGO Coordinating Committee on Development (NGO-COD). Already existed to support community organisations, women's groups, and child development centres. The Social Investment Fund (SIF) and the Regional Urban Development Fund (RUDF) financed community-based, demand-driven projects. Scaled up after 1997. Communities learned to plan, invest, assume debt. Projects undertaken resulted in small irrigation and other infrastructure repairs and tourist facility improvements. Provided employment to groups, such as women, that labour-intensive workfare can miss. Funds had a clear exit strategy (known to participants) were terminated at the end of 1999</p> <p>Effective</p>	
Price controls, provide staple foods and other	<p><b>Philippines:</b> Food subsidies. National Food Authority (NFA) mandated to set floor price for rice to protect farmers and ceiling price to ensure consumer welfare, and maintain a</p>	

necessities at subsidised prices	<p>buffer stock. In 1998, it imported rice and set up Enhanced Retail Access for the Poor (ERAP), or sari-sari, stores to sell basic commodities (such as sugar, coffee, milk, cooking oil, sardines, and noodles) at below market prices. Studies show it was overwhelmingly the non-poor who benefited from these stores. NFA unable to prevent both high consumer and low producer prices</p> <p>Ineffective</p>	
Decision-making and implementation	<p>Crisis broke suddenly and unexpectedly. In early months, both IMF and governments were firefighting, taken aback at the scale and speed with which the macroeconomic malaise developed.</p> <p>Crisis had not been countenanced — after all, SE and E Asia was a growth success with widely shared benefits, so little preparedness. Some early decision-making therefore followed the instincts of the IMF and governments, rather than a clear analysis of exactly what was happening.</p>	

Highly Pathogenic Avian Influenza	<p>Despite the potential for a human pandemic and large losses of life, this remained largely a veterinary disease. However, it has had some impact in shaping responses to the COVID-19 pandemic.</p> <p>Important lessons on decision-making in uncertainty and how to improve mathematical modelling of pandemics.</p>	
Livestock culling	<p>Effective at eradicating the disease in livestock but created mistrust in populations and created incentives not to report animal ill-health to the authorities.</p>	<p>Create veterinary extension services that deal with all livestock disease (not only HPAI) to nurture trust between farmers and government.</p> <p>Combine with livelihood programmes that support the risk management strategies of farmers, including supporting their crop production.</p>

Public awareness/messaging around outbreaks	Often created more fear than useful response, due to consumers being provided with inadequate information, which led to unnecessarily cautious behaviour by consumers.	<p>Must compensate farmers when the market for eggs and/or chicken collapses due to fear of contracting HPAI from chicken and eggs.</p> <p>Support other impacted industries (such as tourism) where reputational damage to a whole country results in tourists staying away.</p> <p>Provide consumers with detailed information on transmission mechanisms and food safety to prevent unnecessary fears.</p>
Preparing for large-scale outbreak by stockpiling antiretrovirals.	Unclear how effective the treatment is or whether stockpiles would be adequate in the case of a large-scale pandemic.	Be aware of attempts by pharmaceutical companies with undue influence to participate in policy-making and pandemic preparedness.
Preparation of national emergency pandemic plans.	Reviews suggest that the majority of plans in Africa lacked plans for business continuity, sub-national planning, operational details, collaboration with neighbouring countries, web reporting systems, and plans for recruiting volunteers from local communities.	Provide capacity-building support to Ministries of Agriculture and Health to better plan for a pandemic. It is likely that demand for such support will increase in the aftermath of COVID-19.
Modelling of potential impact of HPAI pandemic.	Models alone are inadequate for pre-empting how a pandemic might unfold as they do not include sociological insights, and therefore do not account for the coping strategies, local knowledge, or gender and cultural norms of those affected by the disease. Instead they treat populations as homogenous and so can neither accurately predict the spread of a disease through populations nor identify control measures.	<p>Ensure that the assumptions behind mathematical models are made explicit and shared with a multi-disciplinary team of experts who can verify and adapt them. Involve mathematical/medical modellers, sociologists, economists, and those who are affected to create a participatory pandemic model: the same disease will spread very differently in different societies, classes, religious groups.</p> <p>Accept that policy-making in a pandemic will involve uncertainty and making decisions without adequate information and that all sources of information should therefore be drawn upon.</p>



		Pandemic responses should start with the experiences of the poorest, most vulnerable, and usually most-affected groups.
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Mainland China 2020 COVID-19		
<b>Medical Responses: prevent transmission</b>		
<p><b>Travel blockade:</b> travel between rural villages/towns and cities suspended; travel between rural villages suspended (exceptions for transport of agricultural inputs and outputs).</p> <p><b>Quarantine:</b> lockdown policies enforced in urban and rural areas, though measures and levels varied.</p>	<p>Blockade &amp; quarantine highly effective in controlling spread of virus. Survey results indicate very few infections and deaths (&gt;700 village informants across 19 counties in 7 provinces surveyed by phone. Only 4 of 726 reported infections in their villages; of the c700,000 village residents only 10 had contracted the virus, with no deaths reported).</p> <p>Highly effective.</p>	<p>Government seized the moment: acted when millions of urban residents and migrants had returned to rural families for Chinese Lunar New Year, and before virus transmission accelerated.</p> <p>Clear, timely messages from government (in contrast to SARS).</p> <p>Government able to deploy arsenal of tools &amp; methods – from high-tech surveillance and monitoring to Mao era mass-mobilisation of party workers down to village level (rural) and sub-district (urban).</p> <p>Public familiar with and broadly accepting of government controls.</p>
<b>Agricultural support</b>		
<p><b>High-level government directives:</b></p> <p>Directives issued by central government</p>	<p>Food prices generally stable across China, though some localised price spikes and shortages.</p>	<p>In contrast to western governments, Chinese government does not appear to have (so far) spent heavily on propping up incomes, despite thin rural safety nets. Why? High savings, strong family networks, expectation of short-lived crisis.</p>

<p>cascaded to lower levels on need to support agric production and distribution.</p> <p>Rapid transit of agric inputs &amp; produce via green channels (frictionless transport on road network).</p>	<p>Spring planting, a key government concern, goes ahead on time</p> <p>Appears to have been effective based on news reports.</p>	<p>Safeguarding agricultural production and distribution was a key priority early on: all tiers of government hierarchy instructed to make this a key priority, with performance grading of lower level officials (affecting pay &amp; promotion) adjusted accordingly (China's cadre evaluation system, which sets 'hard' performance targets, works very effectively in ensuring lower level officials follow central directives)</p>
<p>Direct support for farmers: Modest direct support for farmers – cheap credit and lower taxes for farmers</p>	<p>Effectiveness of (limited) government fiscal measures hard to discern, but overall points above (stable prices, spring planting) suggests overall package effective in terms of agricultural production and distribution.</p> <p>But lockdown has negative impact on employment, income, diet, education, because rural livelihoods increasingly dependent on migrant remittances. Likely buffered over short term by savings, strong family networks and normal (pre-virus) stockpiling of food for Chinese New Year.</p>	<p>Direct support options limited as rural workers and migrants self-employed.</p> <p>Negative impacts on rural incomes due mainly to temporary cessation of remittances as migrants locked down in 'home' villages and unable to return to towns and cities.</p>
Swine flu 2009		
<p>Travel restrictions: e.g. the EU advised against all non-essential travel to the US and Mexico.</p>	<p>No effectiveness on mitigating the spread of the disease. Instead, restrictions helped further stoke fear of the virus, leading to avoidable economic impacts on tourism. Unlike other flu epidemics, 'swine flu' was widespread within 6 weeks. Combined with late discovery of the virus this meant that even the most severe travel restrictions would not have helped further human-to-human transmission. The CDC estimates that 60.8 million people in the US alone were eventually infected.</p>	<p>Policy responses need to be run by high reliability professionals (in this case, epidemiologists), who were missing during 'swine flu' outbreak.</p>
<p>Trade embargoes: 27 countries banned imports of pork/pork products</p>	<p>No effectiveness on mitigating the spread of the disease, which was being transmitted by humans. Instead, embargoes led to a fall in demand for pork and pork products. In the US alone, prices fell by 15% and caused total costs of up to \$400 million to the</p>	<p>Consult OIE and veterinary experts before policy decisions are made regarding zoonotic pathogens. Information on</p>

from North America, including mass slaughter in Egypt	industry. In Egypt, mass culling of 300,000 pigs disproportionately impacted poor, pig-raising communities (e.g. garbage pickers).	<p>how H1N1 strains spread was already there, yet it was not used as part of the public health response.</p> <p>Incentivising farmers to self-report disease outbreaks, for example by providing economic safety nets when their livelihoods are threatened, can be far more effective in controlling animal disease outbreaks before they are potentially transmitted to humans.</p> <p>Local knowledge of disease surveillance can also help control animal disease outbreaks.</p>
Public awareness campaigns	<p>Campaigns managed to restore confidence of eating pork and pork products among consumers. Markets normalised within 4 months.</p> <p>Very effective:</p>	Prompt dissemination and clear communication of information regarding the disease, leaving as little room for uncertainty as possible.
Public purchase programmes	<p>Despite USDA purchasing over \$200 million worth of pork and pork products, prices still slumped. Public information campaigns had far greater effect on restoring prices at a much lower cost.</p> <p>Ineffective.</p>	Not relevant to COVID-19
Decision-making and implementation: International coordination	<p>Lack of international coordination between WHO, OIE and FAO led to delays and uncertainty over how pH1N1 could spread, fuelling uncertainty and fear. This led to avoidable negative economic impacts, such as a slump in demand for pork and damage to tourism and hospitality sectors.</p> <p>Counter-productive</p>	Invest in capacity to monitor developments and bring together lessons, evidence and findings effectively and from a number of different agencies to fully inform policy decisions. As zoonotic pathogens become more common, there will be an increasing need to bring together professionals from both veterinary and medical backgrounds.

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## Accounts of other recent crises

### B. Ebola in West Africa (2013-2015)

#### What happened?

Causes: Ebola virus disease (EVD) spread from Guinea to Sierra Leone and Liberia, and eventually to at least three neighbouring countries, as well as leading to cases in Europe and the United States. In total, around 12,000 people died. The case fatality varied from 28% in Sierra Leone to 67% in Guinea (WHO). (It was significantly higher than mortality rates for COVID-19.)

Economic impact: EVD had a huge impact on the livelihoods of millions of people. In the informal sector, more than half of all jobs and self-employment was lost. Agricultural labour, on which many of the rural poor depended, was badly disrupted. Job losses were worst for women, because of their disproportionate work as small traders and in self-employment in the food sector. The impact on jobs was especially large in urban areas (construction and restaurants) but in rural areas, food/beverage and restaurant industries were worst affected, partly because of fears food included bush meat. Overall, a majority of people — up to 66% of households in Liberia — reported lower incomes. The impact on food production was not nearly as great as was feared or as was portrayed at the time. At national level, the production of rice (the main staple food) in 2014 was estimated at down by 4%, 8% and 12% respectively, in Guinea, Sierra Leone and Liberia compared to 2013, although some sources suggest that production was down by up to 25% in the hardest hit areas. However, this is under one standard deviation of the multi-annual variability of lowland rainfed rice production in West Africa, i.e. represents a 1 in 6 year event.<sup>16</sup> At the peak of the food insecurity, over two million people across the three main affected countries were deemed to be in need of assistance or to be in severe food insecurity (FAO Oct 2015).

Cause of economic impact: Overall, the overwhelming majority of the economic impact of the EVD outbreak was not due directly to EVD (i.e. to mortality or morbidity) but to the impact of control measures taken to control its spread and to changes in behaviour, caused by fear of the disease. Markets were disrupted by the closure of borders, including to trade; difficulties in internal trade because of travel restrictions, checkpoints and fear; and problems for retailers, due to fear and the loss of purchasing power. The economic impact was widespread, with little geographic association between the incidence of Ebola cases and declines in economic activity. It is important to put into context the high numbers of people deemed to be highly food insecure (over 2m, see above). Peak food insecurity was recorded in September-October 2015, i.e. months after the epidemic was largely over and when economic activity was already beginning to recover. This, though, is the annual hungry season, just before the next harvest is due and when heavy rains make many rural areas quite inaccessible for food markets. The analysis of acute food insecurity by same sources in May 2015 (when the epidemic was almost over in Liberia and Sierra Leone) **attributed less than a quarter of the acute food insecurity to EVD in Guinea and Liberia and less than a third in Sierra Leone** (FAO May 2015). Economic slowdown in China and the collapse of global commodity prices led to an almost total collapse in production, in particular of rubber (10% of the economy of Liberia in 2014) and iron (18% of the economy of Sierra Leone in 2014). This had a greater economic impact than EVD, both on the national economy as a whole and as a cause of acute household food insecurity. Liberia's GDP remained flat in 2015 with EVD, but suffered a

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<sup>16</sup> Source: van Oort and Zwart 2018

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significant contraction in 2016, due to capital flight and a fall in private investment as a result of the collapse of prices from rubber and mining.

Food insecurity and prices: Food insecurity was heightened because food prices increased, mainly because of difficulties with trade. Price rises varied from around 30% (e.g. for imported rice in the Sierra Leonean capital) to 100% in more distant areas where supply chains were longer and more disrupted after the closure of borders. There were particular hardships for some quarantined areas where community sharing was no longer possible and the supply of food to the quarantined was insufficient. Fewer traders were operating, partly because of restrictions (e.g. closed markets, checkpoints, border closures) but also because of fear. This particularly affected perishable products such as vegetables. However, price rises were relatively short-lived and by 2015 prices had stabilised.

Agricultural production and incomes: Agricultural production in 2014 declined (on average by under 10%, but locally by up to around 20%) despite favourable growing conditions, mainly due to disturbances with the movement of agricultural labour at the beginning of the agricultural season (March-May). Agricultural income declined more due to market disruptions and collapse in demand, especially for perishable crops. The reduction in number of traders may also have reduced farmers' bargaining power. Some longer market chain sectors (e.g. cocoa, animal products) were affected more than others (e.g. maize, cassava), e.g. due to reduced purchasing power of consumers, reliance on feed imports, exports, etc. However, the overall impact on farm-gate prices was small. By 2015 the number of rice traders had normalised.

Adaptation/mitigation: There was evidence of some adaptation and resilience, which softened the impact. For example, many market traders began selling from home. However, there was little evidence that people moved sectors or adapted their work type in the face of the crisis. Changes were made in consumption patterns, and new trade routes were developed (e.g. through Mali). Coping mechanisms were similar in urban and rural areas, and are similar to those found in most food security crises: reducing consumption, including a reduction in diet diversity, borrowing, using savings (including selling livestock), sending children to stay with relatives, delaying investments. Between 35%–65% of households reported using each of these.

Gender impacts: Because the most-affected sectors in the informal economy are dominated by women's participation (retail marketing, cooked food), they were affected more than men by the economic disturbance. Teenage pregnancies increased during Ebola, which led to a drop in post-crisis school enrolment. There was also an increase in transactional sex among older women in areas unaffected by Ebola. However, there was reduced fertility overall (UNDP).

Children: Schools were closed for months. Most primary school children returned after the epidemic but drop-out rate from secondary was high (27% did not return).

Recovery: Economic recovery was fast. 2015/16 harvests were good. By beginning of 2016, household incomes were back at pre-EVD levels (FEWSNET). Other non-EVD factors became important (see above). International trade had resumed by end of 2015. The speed of recovery was not a surprise. Productive assets and productive capacity had not been lost in EVD, despite warnings from aid agencies that farmers had eaten their seeds as a result of EVD and would be unable to produce. (In this, EVD is unlike the AIDS epidemic, which involved sales of productive assets for repeated medical care). Agricultural producers only needed access to planting material (which is rarely difficult for farmers) and possibly cash to pay agricultural labour, depending on how mutual labour was organised. Recovery was similar in the informal economy: as soon as there was demand, it bounced back very fast. Economies grew in line with normal trend in 2016 in Sierra Leone and Guinea. By beginning of 2016, FEWSNET reported that food

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insecurity across the region was minimal. Long-term trends showing a decline in stunting and acute malnutrition were not impacted by EVD. Residual poverty remains post-EVD– just as it preceded EVD.

## **Responses: content**

### **a) General**

Control measures needed for EVD were well-known from previous isolated outbreaks. They include diagnosis and contact tracing; isolation of patient and quarantine of contacts; safe burials; public health information on safe behaviour.

Focus in the beginning was a top-down, medical response. But this was ineffective due to low trust in government, lack of previous experience with Ebola, and lack of community engagement, including insensitive details (e.g. colour of body bags).

Contact tracing in Guinea, Sierra Leone and Liberia was difficult, mainly due to economic and social population mobility patterns, as well as fear-induced movements. The West Africa outbreak was the first time Ebola had reached highly urbanised areas, complicating matters further. When intensive community follow up was eventually done on contact tracing, many contacts had not been on initial lists. Stigma/fear provided disincentive to come forward, leading to unreliable data on caseloads.

Some whole communities were placed in quarantine as well as affected households. Some in quarantine were not given adequate support for their food supply, leading to some people escaping quarantines. In some cases, mistrust of all authorities led to food aid distributions being met with violence, of fears that the food had been poisoned.

As the importance of social understanding and treating people with respect became more accepted, the way in which communities were engaged with changed (e.g. engaging traditional healers, using youth as peer educators), the response was much more successful and the epidemic was gradually brought under control.

This allowed Sierra Leone and Guinea to move from district-level quarantines to micro-cerclage approach once transmission dynamics were better understood. Behaviour-centred interventions also proved more scalable than medical ones.

Isolation units and field hospitals were set up in late 2014/early 2015, but by then the chain of transmission had more or less been broken, although isolated outbreaks continued to occur until the end of 2015.

### **b) Food security and agriculture**

Livelihood responses came late, when EVD was already peaking or afterwards.

Market support was not a major humanitarian focus in 2014. Disruption to markets was the big issue, but not addressed by any interventions – beyond some grants to individual traders in 2015. No documents were found analysing how market disruption could be minimised during EVD.

Most international assistance for livelihoods (covering agriculture and food security) was delivered in 2015, and much geared at supporting recovery. However, the recovery in 2015 was very widespread, far beyond the coverage of aid projects. There is little evidence that support given in the name of recovery made any significant difference to the speed or extent of recovery.

We found little publicly available documentation about what non-humanitarian actors were doing to support recovery or to the impact of anything they were supporting.

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The content of livelihood support was similar to that found in most humanitarian response. Cash assistance was prominent. Otherwise, interventions were from the usual list of seed distributions, disseminating standard technical agricultural messages, support to village coops and some 'livelihood diversification'.

There is very little evidence about effectiveness of different livelihood support interventions. Evaluations are rare and those that exist are poor on impact assessment – almost nothing has a control, which is critical to understanding if any improvements have anything to do with an intervention, since projects were taking place at a time of general recovery. The economies of the three countries all bounced back very quickly. Cash assistance was certainly important – if targeted well. However, it is less clear if the various projects distributing seeds and tools, or creating farmer groups, had a major influence on the speed of recovery.

## Responses: process, implementation

WHO recognised scale of pandemic much too late (7<sup>th</sup> August, 4 months after MSF calling it an emergency), leading to delayed response by DFID, USAID, etc. Prompt responses in Nigeria and Senegal were far more effective. WHO recognised its failings in October (in a leaked report).

Funds to response came very late. Pledges were made late, but arrival of funding only took off in Dec as epidemic peaked. Response at its height in 2015, when it was tailing off.

Agencies gradually recognised importance of being flexible. Ebola was different from other crises, since it evolved gradually and in uncharted ways. But data on the spread of EVD and mortality rates was a significant bottleneck. You cannot be proactive if you do not know what is going on. It took a long time before responders had the data that they needed.

Required local technical knowledge in epidemiology, especially adapting existing competencies to new situation (e.g. Cholera in Sierra Leone).

Response had a negative impact on health care for everyone else. Aid support for health care was almost entirely for EVD during 2014. There was a decrease in normal vaccinations, on those seeking treatment for malaria, etc, and on number of women giving birth in medical facilities. But no data exists on what impact this had on health of babies or on maternal mortality.

Cash transfers to Ebola victims and survivors seen as effective in rebuilding livelihoods, particularly as they were stigmatised. Various aid agencies also provided food and non-food items to quarantined households (DFID, USAID), but also cash transfers to people (USAID) or businesses (DFID).

Important lesson: front-line workers need looking after, including rotation, support and recognition of dangers they run from both EVD and angry communities. Like COVID-19, healthcare workers and carers treating Ebola were at particular danger of mortality. There was a significant need of PPE. And they need paying. People working on burials in Sierra Leone stopped when they were not paid.

Coordination was a huge problem, especially between the medical/epidemiological and the humanitarian responders. Tensions between UNMEER and UN agencies used to taking the lead in humanitarian crises. UN agencies complained of being side-lined and their capacities not fully exploited – though UNMEER only established on 18<sup>th</sup> Sept, largely in response to the lack of leadership then prevailing.

## Lessons learned of relevance for COVID-19:



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## a) General

The impact of the epidemic on food security will be related much more closely with the *duration* of the epidemic in any country than on its severity (number of cases or fatalities). Measures taken to control the epidemic will be the major determinant of the epidemic's impact on food security. A top-down approach to enforcing behaviour change is likely to be counter-productive, and to delay the time when the epidemic is brought under control. If top-down and insensitive measures are used which do not treat people with respect and as active agents in the control of the disease, this will thus increase the impact of the epidemic on food security.

Many of the lessons which had been learned in previous epidemics of Ebola (in DR Congo, Uganda, etc.) were not applied and had to be relearned in West Africa at great cost. It cannot be taken for granted that these lessons, many of which are highly relevant to COVID-19, will be recognised and applied in 2020. The control of COVID-19 is likely to be harder than EVD in some respects: asymptomatic transmission occurs, it is more infectious, diagnosis is harder without testing. This makes the basic strategy for controlling epidemics (case identification, contact tracing, ensuring isolation) much harder.

There are signs that lessons have still not been learned that epidemics are controlled better through constructive engagement with people than by heavy-handed, top-down and authoritarian enforcement of rules. As of 25<sup>th</sup> April 2020, COVID-19 had killed 32 people in Nigeria (source: John Hopkins). By 15<sup>th</sup> April, the state's armed forces had killed at least 18 in enforcing lockdown measures (source: National Human Rights Commission).

Each country is different. The lack of trust in authorities was particularly low in war-torn Sierra Leone (as in DR Congo) and this had a huge influence on the spread of the disease. It is necessary to understand the history of the country in order to know how to respond.

The delays in developing a coherent strategy for response are understandable, because of the almost irresistible pressure in an emergency to react quickly. Nonetheless, time invested in thinking through a strategy, in undertaking preparatory work, setting up data and information management systems and in establishing coordination structures will prove essential during the epidemic and should not be delayed by other pressures. It is necessary to be proactive and at the same time to recognise that events may not unfold as predicted. There is a need therefore to have a plan, and also to have a plan for changing the plan quickly.

Decentralised response works best. Some guidelines need to come from centre and for some things a national approach and national policy is needed. But the more actors at sub-state level, from districts to communities to individuals, are empowered, the quicker, the more flexible, the more appropriate and the more effective will be the response. This applies both to measures to control the epidemic and to measures to ensure food security.

Delays in addressing the other needs which arise as a result of the epidemic can have serious consequences, especially in societies where many people live a hand-to-mouth existence with almost no capacity to absorb any additional shocks. Action is needed to ensure the continued functioning of other health services, and of other basic services such as education, water, etc. There is a need to take measures to protect livelihoods as soon as these are impacted, e.g. with lockdown measures (see below).

## b) Food security and agriculture

There is a general lack of documented evidence of the impact of livelihood interventions undertaken in the EVD epidemic. Evaluations rarely analysed impact with any rigour (e.g. claiming credit for changes without their being any attempt at a control or even a wider qualitative examination of the changing context.)

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Livelihood interventions in the humanitarian sector were highly generic, which suggests that they were not necessarily addressing the actual problems faced by people. Apart from direct cash transfers based on household need, there is little documented evidence of what the actual constraints were. For example, distributions of agricultural inputs do not detail what assessments were made of farmers' actual constraints in accessing inputs. The modality of intervention is almost never discussed in project documentation or evaluation. This does not only refer to the choice of in-kind food aid or cash transfers. Constraints to accessing agricultural inputs or to farmers' ability to market their crops (for example) can be addressed in many ways, and the purported existence of a constraint may justify an intervention, but does not necessarily justify the intervention chosen. This distinction was not well considered by the humanitarian sector in the EVD crisis. The Global Humanitarian Response Plan for 2020 suggests that the same pattern of generic responses is likely to continue.

There is generally a need to question the expertise of humanitarian agencies in supporting post-crisis recovery. There is an equal need to expect a greater engagement of non-humanitarian actors in supporting recovery as the COVID-19 crisis recedes; for their interventions to be more explicit and their impact monitored; and for much greater dialogue between humanitarian and non-humanitarian actors on the development of a strategy for supporting recovery and how it can best be implemented. This does not imply that recovery may not take place without external assistance.

The predicted impact of COVID-19 on agricultural production in sub-Saharan Africa, at 2.6-7%<sup>17</sup> is slightly lower than was the impact of EVD (4% to 12%). This small loss of production is unlikely to have any measurable impact on food security at either population level or at household level. (Most of the poorest rural households depend heavily on paid labour rather than on production and thus do not depend so heavily on crop yields for food security.) Agricultural production is likely to recover fully in the first season after the epidemic is over, unless it is long-lasting. It is highly unlikely that difficulties in accessing planting material will be a constraint to recovery.

Disturbance to markets is likely to be the critical economic disturbance that affects most people's livelihoods. Heavy-handed measures to control the spread of COVID-19 should be avoided as far as possible. Closing international borders to trade in the EVD epidemic had a serious impact, and fortunately it seems that this lesson has been learned.

There is a danger that the top-down authoritarian approach to public health is being repeated in some countries. This has direct relevance for market activity and food security. EVD showed that communities are capable of working together with public health experts to devise their own ways of working that meet their own needs and also the needs of public health. This creativity should be engaged, for example to design ways to keep more markets more open in safer ways. The best outcome for mortality overall will have to find the balance between minimising the risk of transmission while finding a way to maximise how much economic activity can be maintained.

Distribution of food proved critical to supporting people who were in quarantine or who could not access food markets for other reasons. However, in-kind aid did not support market activity, and there is no reason to believe that there was any reason to give food assistance using in-kind modalities (rather than cash) for the majority of recipients. There is no documentation of any analysis that led to decisions about the choice of modality, although the criteria for making the choice were largely accepted in the humanitarian community years before.<sup>18</sup> Other studies

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<sup>17</sup> Source: Albert Zeufack, Royal Economic Society webinar on Developing Nations and COVID 19, 23 April 2020 [<https://www.res.org.uk/resource-library-page/covid-19.html>]

<sup>18</sup> See for example WFP 2005, Annex B.

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have shown how far aid can have a negative impact in depressing market activity further, retarding recovery and concentrating the benefits of trade very narrowly in a few elite hands. This lesson may need re-learning: several countries are already implementing in-kind food assistance projects, even where food markets are open.

Market chains can be very adaptable, but even when supply chains do continue to operate, there may be many livelihoods lost as a result of the disturbance. The continued supply of a commodities in a capital city market is not necessarily an indicator that livelihoods have not been destroyed. Supporting continued market functioning is likely to be the most important intervention in the economic domain during the COVID-19 epidemic. This requires decentralised ways of working that can appreciate the business workings of people with little financial capital, who depend on credit financing from within the value chain and not from financial institutions.

The aid discourse can easily be dominated by highly incomplete narratives. Food insecurity and poverty have many overlapping and interacting causes, yet there is a tendency to focus only on the most visible and, in the case of humanitarian actors, only the causes related to what has been defined as a humanitarian crisis. Aid documentation for 2014-15 only discusses food insecurity in relation to EVD. There is no mention of commodity prices, and the loss of income and employment in rubber or iron. (strikingly, the report *by FAO* that EVD was a minor contributor to acute food insecurity is not reflected even in FAO's project documentation.) This probably led to serious problems of structural acute poverty being ignored, while resources were spent on largely ineffectual interventions of a humanitarian nature. There is a risk that such a blinkered approach to food insecurity will be repeated in 2020, if aid actors who come in to respond to a new crisis do not have a wider perspective on the challenges being faced in the affected country and only focus narrowly on COVID-19, rather than on the wider network of causes of the problems they try to address, particularly in the area of food security. For example, in areas affected by the current locust threat, this is likely to be a far greater threat to rural livelihoods.

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## C. Ebola DRC

### What happened? Causes, Consequences, Nature of Shock

**Causes:** the disease was first reported in early 2018 and an outbreak was confirmed in August 2018. By March 2020, there had been around 3,500 cases of EVD and 2,300 deaths, making it the second largest outbreak of EVD after the West African pandemic of 2013-16. A small number of cases emerged in mid-April 2020, dashing hopes that the epidemic had been squashed, and it remained unclear at the time of writing whether these were isolated cases. The disease was caused by the Zaire Ebola virus strain, which is the most lethal known strain, originating in fruit bats which are widely eaten as bush meat. Combined with the heavy-handed response to the disease by government, NGOs, and the international community, which created mistrust and a reluctance to seek treatment, this led to a very high case fatality rate of above 60%. Delaying medical treatment, as with many other diseases, reduces the chance of a cure, and for EVD the odds of death increase by 11% per day without treatment.

**Economic impact:** as this epidemic was ongoing in April 2020 and focus had shifted to COVID-19 by March 2020, the economic impact of this particular epidemic remains relatively poorly researched and documented. However, there were detrimental disruptions to agricultural labour, travel restrictions, and the closure of markets, which resulted in many small businesses shutting down and – seemingly – a decline in investment. There has also been a decline in cross-border trade and business-related travel. A significant consequence of the epidemic was the damage caused to the health system (due to mistrust, death of health workers, funding being diverted to EVD), resulting in relatively simple illnesses going untreated and leading to excess morbidity and mortality.

**Cause of economic impact:** the economic impact of the disease itself was relatively small as of a population of over 10 million people, only 3,500 cases were identified, i.e. less than 0.04% of the population became infected. Control measures were stringent and often enforced violently, which led to changes in behaviour and the cessation of normal economic activity. This, coupled with fear-based behaviour changes, is likely to have been much more detrimental.

**Food insecurity and prices:** reports suggest significant increases in child malnutrition, due to disruption of agricultural labour, a reduction in trading activities, and fears around the consumption of bushmeat (Rohwerder, 2020). Food prices also increased, by approximately 15 to 20% in 2019, though it is unclear whether this can be attributed to EVD and containment measures or whether this was due to crop pests and armed conflict (FAO, 2019).

**Gender impacts:** women, reportedly, were at increased risk of infection due to caring duties, lack of decision-making power particularly with regards to sex. Their livelihoods were also impacted by changes in time-use and quarantine, which resulted in many resorting to risky coping strategies, including transactional sex. Finally, reduced access to sexual and reproductive health services reportedly caused increased morbidity and mortality among women.

### Responses: Content

The initial response to the epidemic was driven by the desire to contain the disease geographically as much as to prevent community transmissions. The result was a heavy-handed response, which included:

- Having armed forces accompany health workers to collect the deceased and quarantine contacts;
- Taking Ebola patients to isolated facilities where family were not allowed to visit them, created the impression that sick relatives were being kidnapped and brought back dead. Given that most sought treatment long after symptoms had started, the majority did not return alive from treatment centres;
- Preventing travel and closing borders, resulting in increased population movement (including across borders) as people sought to escape quarantined areas;
- Failure to provide adequate supplies of basic necessities to those who had been quarantined;



- Using material from West African, without adapting it to Congolese cultural norms. One example: a poster depicted women involved in preparing a body for funeral, which is taboo in DRC and so caused a great deal of confusion and mistrust;
- Failure to recognise that EVD was not the only or even biggest concern of local populations. Concerns that were as or more important than EVD to local populations included: reproductive health services, armed conflict, other diseases that were causing morbidity and mortality but were less likely to spread to the West, maintaining livelihoods, paying for school fees, etc. (In the absence of EVD, health care spending in DRC is \$21 per year. During the epidemic, the international community spent hundreds of millions of dollars in Eastern DRC which has a population of perhaps 10 million people. This did the opposite of engender trust);
- Excluding traditional healers from EVD response both increased mistrust and meant that their skills and social capital were not used;
- Poor disease prevention protocols meant that infections in hospitals were common: infections in hospitals were the second most common source of transmission, after caring for a sick relative) (Roberts et al., 2020).

There is not much numerical analysis on the impact of the epidemic, but particularly the secondary impacts of the disease are reported to have been significant and local populations were left to foot the high costs of containment without receiving adequate health care or compensation:

- Social impacts: trust declined in an area already suffering from conflict due to restrictions on movement/fear of infection; stigmatisation of survivors; school closures; greater disease burden for women;
- Health care provision beyond EVD declined and in some cases became very difficult to access. This affected pregnant women and those needing sexual and reproductive health services in particular;
- Increased distrust stoked further political tensions and insecurity;
- Loss of labour, particularly in the agricultural sector;
- Limits on movement impacted all sectors, but was particularly detrimental to traders (often women);
- Stigmatisation/fear of survivors impacted individual household's ability to recover economically (Rohwerder, 2020);
- Influx of cash into the local economy generated opportunities for economic and sexual exploitation (Rohwerder, 2020);
- It was easier for young people to find work than their elders in the response programme which meant that "traditional leadership structures have been increasingly challenged, and inter-generational tensions may result in challenges for participatory decision-making" (Rohwerder, 2020);
- Cost of health care increased as nurses were not paid and so they began charging patients (Rohwerder, 2020);
- Dramatic increase in malnourished children, due to neglect of fields by those working in the response, lack of manpower in some families, self-isolation, higher wages due to EVD response hiring large numbers of people, reduced market trading, fear around bushmeat (Rohwerder, 2020);
- 13% of fatalities were health care workers, which had a significant impact on the ability of the health care system to recover, impacting long-term economic growth (Fanning, 2018).

Impacts on women were particularly detrimental:

- Women were at increased risk of infection, due to their caring duties, food preparation, types of work, lack of decision-making power with regards to sex, transactional sex to make up for lost income;
- Time-use: quarantine often increased women's domestic work, including caring for the sick;
- Reduced earning capacity, which meant resorting to risky coping strategies, including transactional sex;



- Reduced access to sexual and reproductive health services: initially, as EVD can cause miscarriage any type of vaginal bleeding was treated as a suspected EVD case, including the imposition of draconian measures.

The high cost of prevention measures were finally recognised in mid-2019, which resulted in a change in the tone of interventions, which gradually earned the trust of local populations.

The most important lessons absorbed from West Africa were:

- More humane treatment of EVD patients, including allowing visitors to the sick and those in isolation;
- Collaboration with the community to find safe burial rituals that fulfilled ritual needs and did not cause contamination risk;
- Not simply enforcing quarantine on those who had been in touch with someone who had EVD, but providing them with adequate food/financial resources and vaccine;
- Discuss vaccination, including why it was available to some but not everyone, how it works, etc. to prevent rumours about vaccines causing death or infertility;
- Provision of psychosocial services (mainly grief counselling) to traumatised communities and families;
- Providing support to survivors who were experiencing the non-infectious, but chronic stage of EVD that lasts for up to a year after the main disease has been successfully treated.

## Responses: Process, implementation

Perhaps because the delayed response in West Africa caused unnecessary deaths and, importantly, the spread of the disease beyond Africa, an early and aggressive intervention was launched in DRC by the international community. While the main lessons from the Mano River EVD pandemic for social scientists was the need to work with the cultural grain, it is possible that the international community absorbed another lesson: namely the need to act early and aggressively in order prevent the spread of the disease regionally and (probably more importantly) inter-continentially. It was only sometime into the epidemic that lessons around community involvement were picked up in DRC.

All of this created the (not entirely false) impression that neither the Congolese government nor the international community were really interested in the health and well-being of Congolese populations, resulting in rumours that the international community was making money from the Ebola effort and/or that the government was trying to eradicate the Nande people with EVD (Fanning, 2018). The other – correct – story that circulated was that the international community was only providing such resources to the region to prevent the disease spreading to the West and people felt that they were treated as disease vectors, rather than human beings.

About a year into the epidemic, the government and internationally community realised that stringent and insensitive control measures continued to lead to counter-productive outcomes, including those with symptoms avoiding treatment, large numbers of people attempting to escape to the safety of Rwanda and Uganda, or refusal to allow safe burial teams to take corpses away. Once this was recognised, lessons from West Africa were absorbed, experts who had been involved in the successful stages of the West African outbreak were consulted, and – with the help of local communities – EVD cases started to decline with local community's assistance.

## Lessons from DRC

*'We care about Africans only when they get diseases that can harm us, not when they are dying of disease that we can treat easily and cheaply' - (Nguyen, 2019: p.1299)*

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## Engage with communities to devise actions that are informed by local knowledge, cultural needs, and which are owned by the communities

- Same as in West Africa: Be nice to people!!! Treat them as humans, rather than dangerous, contagious, infectious disease vectors who are too stupid to prevent illness themselves.
- Be prepared. There will be more EVD epidemics and we know where they are likely to happen. Consider how to respond **with** communities in advance of an outbreak. Involve community leaders and traditional healers in that planning process.
- Engage anthropologists to avoid generic responses to calls for participation and respect of local cultures and to understand the power mechanisms/underlying logics behind resistance to control measures (Kelly, 2020).
- Make sure that women are meaningfully involved in planning.
- Train healthcare workers not only in disease control, but in participatory epidemiology.

### Communicate sensitively:

- Avoid militaristic language – battle/fight/survivor, etc. – as these may be misunderstood, particularly in translation (Roberts et al., 2020).
- Provide practical information – including how to care for the sick and bury the dead – rather than detailed information on the disease itself (Kelly, 2020).

### Ensure adequate medical and public health response

- Protect health care workers from the disease (Fanning, 2018) and ensure that health care providers are paid adequately so that they do not resort to charging patients (Rohwerder, 2020).
- Focus on the provision of basic health and WASH services, both before and during a pandemic.
- Vaccines seem to be effective but without trust, people will be reluctant to submit to vaccination protocols.
- Train health care workers in basic triage: EVD symptoms are similar (but not identical) to symptoms associated with early pregnancy complications, which can cause much confusion (Roberts et al., 2020).

### Protect livelihoods of affected populations

- Limit control measures as far as possible as these may be much worse for livelihoods than the disease itself (Rohwerder, 2020). Significant impacts on agricultural production, were caused mainly by control measures, and could have been limited (Rohwerder, 2020).
- Ensure that the primary motivation of control measures is not to protect the global north, but to deal with the epidemic locally. That means ensuring that affected communities receive food aid that is sufficient not only for the required quarantine, but also for as long as it may take to re-establish an income stream and providing quality health care for a wide range of medical needs (Roberts et al., 2020).

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## D. HPAI – Highly Pathogenic Avian Influenza

### What happened? Causes, Consequences, Nature of Shock

“The world was waiting for a pandemic... and I think that just because people were waiting for this event to occur, when it did occur, everybody capitalised on it” – key informant quote (Forster, 2012)

**Causes:** H5N1 was first isolated from a farmed goose in Guangdong, China, in 1996. In 1997, a similar strain of flu resulted in outbreaks among poultry in Hong Kong, necessitating mass culling. Human infections of H5N1 were first reported in a family in Hong Kong in 2003, but no further cases were reported in humans until December of that year in Vietnam. Thailand and Vietnam both had further cases in early 2004, while there were significant poultry infections in Vietnam, Japan, Thailand, Cambodia, and Laos and further culls were deemed necessary. Following approximately 30 human deaths and one incidence of human-to-human transmission in January 2005, countries that were able to afford it and the WHO began stockpiling Tamiflu. Since then, H5N1 has continued to cause disease in both farmed and wild birds across much of Asia and Europe, West Africa, Sudan and Egypt, and the occasional human infection and death. However, very few human cases have been reported globally since 2010.

**Economic impact and causes:** the H5N1 pandemic caused fewer avian cases than feared, and very few human cases. Some, therefore, consider this largely a veterinary rather than a human epidemic. Direct economic consequences were limited to the loss of livestock by poultry farmers, mainly in South-East Asia, where damage to livelihoods were limited due to farmers' established coping strategies. Nevertheless, Thailand saw its GDP decline by 1.5%, Vietnam between 0.3 and 1.8% and Thailand's agriculture growth was halved in the years of the outbreak (Rushton, Viscarra, Guerne Bleich, & Mcleod, 2005). However, economic damage was not due to avian flu, but due to tourists staying away for fear of HPAI (ibid.) An outbreak in Nigeria resulted in the most significant event in Africa, with economic impact resulting from fear-based responses, when the sale of egg and chicken fell by more than 80%. Nearly half of poultry farm workers on unaffected farms lost their jobs. Four months later, sales were still <50% of baseline (Breiman et al, 2007).

**Food insecurity and prices:** impact on prices was limited to (usually localised) decreases in chicken and egg prices, as consumers chose other animal products over poultry.

**Agricultural production and incomes:** poultry farmers were affected, mainly in South-East Asia. However, studies by the FAO suggest that the impact was limited on livelihoods, as livestock rearing usually represented only one of many income-generating activities for affected households (Rushton, et al. 2005).

**Adaptation and mitigation:** this was limited to farmers shifting production away from poultry to other livestock or crops.

**Recovery:** where studies exist – for SE Asia – recovery for individual households was reportedly very rapid, often within the same season (Rushton et al, 2005). At the national level, recovery was largely determined by how rapidly tourists returned to the country after the outbreak.

### Responses: content

The primary response was the culling of livestock, as human cases were limited, and the aim was to prevent a more virulent form of the virus being transmitted to humans. There was some conflict between veterinarians and livelihoods experts, with the former emphasising culling as the main strategy and livelihoods experts being reluctant to take such drastic measures without more information on the nature of the disease. “The outbreak narrative may be appropriate and necessary in some circumstances, however, where diseases are entrenched and/or endemic ...

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different approaches are needed: long-term prevention and managing endemism. Emphasising the eradication pathway may be impossible” (Scoones & Forster, 2008). Nevertheless, culling remained the primary response.

The hoarding of vaccines, ARVs, and other scarce resources, was common among rich countries (and to a lesser degree the WHO) benefitting pharmaceutical companies but possibly hampering global preparedness as only rich countries were able to stockpile (Scoones & Forster, 2008).

Many countries drafted national preparedness plans, though many were found to be inadequate by the WHO, particularly in Africa (Sambala et al., 2018). National preparedness plans require five functional components: planning and coordination; situation and monitoring; prevention and containment; health system response; communication. Across Africa the WHO found a lack of preparation to ensure business continuity, sub-national planning, operational details, collaboration with neighbouring countries, web reporting systems, plans for recruiting volunteers from local communities.

### Responses: process, implementation

Pandemic modelling (by Ferguson from Imperial College among many others) demonstrated the potential spread and devastation of HPAI. However, these models did not consider socio-economic class and livelihoods strategies, most likely overestimating the speed of spread (Leach & Scoones, 2013). These models also fed into well-established narratives surrounding flu and other epidemics, which creates the impression that disease emerge from dangerous places and from people who are ‘different’ to ‘us’. Such narratives pave the way for draconian measures, which may be more detrimental than the epidemic itself, while also capturing the imagination of the general public which may ensure that resources are made available (Leach & Scoones, 2013; Scoones & Forster, 2008). In the case of avian flu, this also meant that the costs of protecting the West was borne by South-East Asia – and particularly its smallholder farmers – where culling was the primary policy response and justified by supposedly ‘neutral’ modelling and the WHO’s narratives of ‘us’ versus ‘them’ (ibid).

At the national level, government responses were hampered by limited knowledge about the effectiveness of policy options: there is not enough information on how diseases spread (beyond simplistic modelling) making it hard for governments to choose between policy options. In addition, governments frequently lack technical and financial management capacity (particularly in Ministries of Agriculture) to respond effectively and with pro-poor policies (Ear, 2009).

Many countries drafted preparedness plans at the national level. Most are lacking in detail at the sub-national level and/or are unrealistic (Ortu et al 2008, WHO 2011, Sambala et al 2018). However, narratives around HPAI have prepared the world for the fact that there will, one day, be a global pandemic that will cause significant disease and economic damage (WHO, 2018).

Avian flu demonstrated – yet again – that the ability to control epidemics depends on state capacity. The ability to control HPAI was severely limited by veterinary extension services which were decimated by SAPs and which were no longer trusted by farmers, meaning that disease outbreaks were often not reported to the authorities quickly (Rushton et al., 2005). Low levels of state capacity, manifested in poor service provision, reduce trust in the state and increase reluctance to report animal disease to governments. (There are clear parallels with the far more deadly epidemics of EVD in DRC and in West Africa in 2013/15).

### Lessons learned from HPAI

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Most of the lessons from the HPAI pandemic are long-term and around preparedness and developing capacity in systems to deal with pandemics more generally. Lessons with some relevance to the current COVID-19 pandemic include:

The recommendations and narratives that emerge from mathematical models of epidemics are only one possible epidemiological story and are often poor at predicting actual outcomes (Scoones & Forster, 2008). Context matters: the same disease will spread in very different ways in different societies, and within societies in different socio-economic and cultural groups. Differences include socio-economic inequality, livelihoods strategies, gender, religion, and cultural norms. Models that do not incorporate these dimensions are unlikely to be helpful for determining appropriate control measures and for predicting the impact of a pandemic on the economy or food and nutrition security;

It is important to acknowledge and treat seriously that communities have their own narratives about the disease based on their experiences. These narratives matter, because they shed light on how the disease behaves in this particular group. Control mechanisms that run counter to these local contexts and narratives are likely to be ineffectual because they do not address how the disease spreads and affects people and because they are likely to engender mistrust.

Dealing with pandemics means dealing with an unknown disease and so decision-making in a situation of uncertainty and ignorance. This requires supporting state capacity to ensure that policymakers have access to analyses that bring together the micro-experiences of those affected by the disease – such as a country’s poultry farmers or certain religious groups – with the bigger epidemiological picture (the “missing middle” of skilled advisors) (Scoones, 2019).

Dealing with pandemics often means dealing with a novel disease (or at least a new variant of a well-known disease) and so decisions must be made in a situation of uncertainty and ignorance. To do this well, state capacity is essential: this means that policymakers who have access to medical and mathematical analysis and can bring these together with the micro-experiences of those affected by the disease – such as a country’s poultry farmers or certain religious groups – with the bigger epidemiological picture are essential (Bazeley & Macleod, 2006; Scoones, 2019). Scoones refers to this as the “missing middle” of skilled advisors (Scoones, 2019).

To prevent zoonotic disease that may affect humans, trusted state-run veterinary services are essential (Rushton et al, 2006). This also allows any compensation schemes to build on farmers’ existing risk management strategies (Roland-Holst et al., 2008).

It is always critical to ask in whose interests particular control measures are being taken and how their costs and benefits are shared. Pandemic responses would do well to take the needs of the poorest, most vulnerable as its starting point. Focus would then be on disease control, agricultural production techniques, extension advice, etc. rather than disease prevention in the world’s richest countries (Forster, 2012).

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## E. Swine Flu

### Causes

In the spring of 2009, a novel influenza A (H1N1) virus outbreak was first detected among people in North America. Although the exact origin of the virus remains unknown, many agree that the source of the outbreak was an industrial swine farm in northern Mexico, from where it earned the name “swine flu”.

The virus is complex and contains genetic material from swine, avian and human influenza from different parts of the world. Like COVID-19, it is respiratory and can be spread through close contact between humans, pigs, birds and other species. However, the spread of the virus is almost certainly linked to humans. People working in industrial swine farms initially spread the virus across North America, including to pigs and humans in rural locations. Human-to-human transmission then helped the virus spread elsewhere.

Confusion over the virus’ origins, its similarity to other strains of flu (both swine and human) and poor surveillance allowed the virus to spread quickly among humans. It eventually affected 208 countries and became the dominant strain of the following flu season. It is estimated that 151,000-575,000 people died of the virus globally. While this falls within the lower end of the range of annual deaths caused by seasonal influenza, the virus was unusual in that it primarily affected children as well as young and middle-aged adults. Typical flu epidemics see 70-90% of deaths in the 65+ age category, whereas people aged *under* 65 accounted for an estimated 80% of deaths from swine flu.

### Economic impact

The total direct economic impact of the pandemic was not much different from typical flu epidemics, causing losses of between 0.5% to 1.5% of GDP in affected countries. Apart from Mexico, South American countries were affected most due to the outbreak of the virus coinciding with an unusually cold winter in the Southern Hemisphere.

In addition, poor coordination and communications based on inadequate knowledge led to avoidable but short-lived economic impacts on certain sectors. In June, the WHO declared a first global pandemic for 40 years since the 1968 Hong Kong Flu. In the media, comparisons were made to the Spanish flu outbreak in 1918, which was also attributed to a strain of H1N1. Fuelled by the “swine flu” misnomer, there was also a widespread and persistent belief that the virus could be contracted by consuming pork. Even after the pandemic, up to a fifth of Chinese people and 13% of Americans still believed so. Fear of the virus, partly stoked by governments issuing travel warnings and trade embargoes, led to changes in consumer behaviour, including a reduced demand for pork/pork products, tourism and hospitality. These behavioural changes hit countries linked to the source of the outbreak more than others.

### Agricultural production and food prices

The North American pork sector was impacted most by the pandemic through reduced domestic demand and the imposition of over 20 import restrictions on pork or pork products, including important markets such as China or Russia. These embargoes were imposed despite no clear evidence that the virus could be spread by meat trade or consumption. Pork prices and futures fell by 15% and exports by 31-36% in the US, resulting in an estimated cost of between \$200-400 million to the country’s pork industry (similar estimates are unavailable for Canada or Mexico). There were knock-on effects on feed markets, but these have not been quantified.

Trade embargoes probably helped some countries protect domestic pork markets and prices. Egypt and Norway put in place plans for mass culling with Egyptian authorities eventually slaughtering 300,000 pigs in May 2009. No compensation was offered, primarily affecting poor, marginalised communities who raise pigs. In Canada, a pig farmer voluntarily slaughtered his herd without compensation after it was infected with swine flu in the early stages of the outbreak.

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## Impacts on (a) women and (b) children

There is no evidence that women were affected by the outbreak more than men were, although the virus did primarily affect younger populations, including children.

## Recovery

The US Department for Agriculture implemented a purchase programme to help boost prices, buying over \$200 million worth of pork and pork products.

Public awareness campaigns on behalf of the US pork industry helped the market recovery relatively quickly (within 4 months). Eventually, trade embargoes were also dropped.

Governments around the world stockpiled medical supplies (vaccine, anti-virals such as Tamiflu and PPE) and up to 600 million people were vaccinated.

## Lessons

The virus was first detected among humans, even though it originated in animals. The impact of the virus could therefore have been mitigated through improved surveillance in livestock farms. Unlike avian flu (H5N1), swine farmers are not required to report cases of H1N1 to the OIE. This is because H1N1 is relatively common among pigs, and is not considered as virulent as H5N1. However, there is clearly a danger that the detection of a novel virus outbreak falls between the cracks, for instance where it contains genetic material from different strains as the “swine flu” pathogen did. Reporting guidelines need to be improved to prevent such gaps.

In addition, there are economic disincentives for farmers to report cases voluntarily. Farmers are typically not compensated when their populations are culled or where other restrictions are placed on operations, leading to a loss in livelihoods. The response (culling) can typically cost more than the symptom (1-2 weeks of respiratory symptoms). Providing safety nets could be more effective in detecting initial disease outbreaks than enforced reporting.

In Mexico, residents at the affected swine farm complained about wind blowing fetid air from industrial pig farms into their communities. If local knowledge and disease surveillance had been taken seriously, the outbreak could have been avoided.

Improved international coordination and work with high reliability professionals could have prevented avoidable behavioural economic impacts. The OIE dismissed the outbreak as a public health/human crisis, whereas the WHO treated it as an animal/food chain crisis. The FAO was late to investigate the link between animal and people, leading to uncertainty and misinformed policy-making, such as the imposition of import restrictions, issuance of travel warnings and in one instance, mass culling. When OIE/FAO/WHO/WTO eventually issued a joint statement emphasising that pork was safe to consume, governments dropped these measures. Increasingly common zoonotic pathogens, including COVID-19, cannot be treated as a purely public health or animal crisis.

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## F. HIV/AIDS

### Nature of the shock: process, causes, consequences

The first case of human immunodeficiency viruses leading to acquired immune-deficiency syndrome — HIV/AIDS — was reported in 1981, at the time a mysterious and novel disease.

It is a viral infection which attacks and progressively weakens the immune system, so that increasingly infected persons become susceptible to opportunistic infections and cancers. It is these secondary complaints that lead in most cases to death, but usually only after 9 or more years since the initial infection by the virus. (Box A) The virus is transmitted through body fluids, including semen and blood, hence those most likely to be infected are:

- Those having unprotected sex, especially if intercourse is rough causing blood to flow;
- Intravenous drug users sharing needles where contaminated blood can transmit from one user to another;
- Those receiving blood transfusions where the blood has been contaminated; and
- Babies of infected mothers through birth fluids or breast milk.

Box A The virus, the disease and transmission
<p>The human immunodeficiency viruses (HIV) are two species of Lentivirus (a subgroup of retrovirus) that infect humans. Over time they cause acquired immunodeficiency syndrome (AIDS),<sup>[1][2]</sup> a condition in which progressive failure of the immune system allows life-threatening opportunistic infections and cancers to thrive.<sup>[3]</sup> Without treatment, average survival time after infection with HIV is estimated to be 9 to 11 years, depending on the HIV subtype.<sup>[4]</sup></p> <p>In most cases, HIV is a sexually transmitted infection and occurs by contact with or transfer of blood, pre-ejaculate, semen, and vaginal fluids. Non-sexual transmission can occur from an infected mother to her infant during pregnancy, during childbirth by exposure to her blood or vaginal fluid, and through breast milk.<sup>[7][8][9][10]</sup></p> <p>Source: Wikipedia</p>

Because the first cases of HIV/AIDS were often male homosexuals and drug users, a stigma was attached to the disease so that some early sufferers were reluctant to admit their infection.

Because it was soon evident that the virus was a slow killer, with treatments only able to ameliorate the secondary conditions arising from weakened immunity, it became a dreaded disease. A positive test for HIV was for many years an effective death sentence.

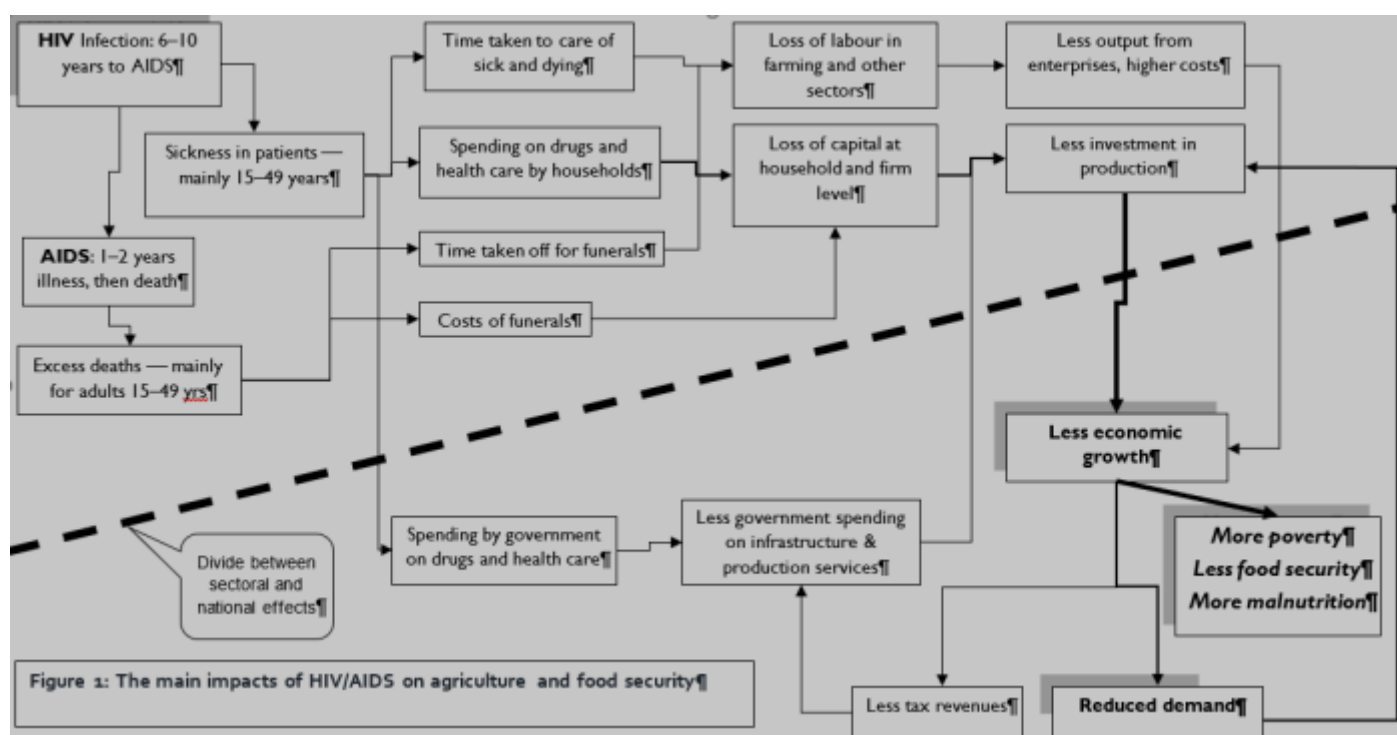
By 2005, more than 40 million persons had been infected, of whom almost 26 million lived in sub-Saharan Africa, with particularly strong infection rates in southern Africa. By 2005, 28 million had died from the syndrome. At that time, an estimated 4.9 million persons were infected every year and 3.2 million died. (UNAIDS 2005).

By 2018, it was estimated that 37.2M persons were living with HIV, that new infections in 2018 were 1.8M and that 0.8 million died from HIV/AIDS in that year. (UNAIDS estimates)

The threat from HIV/AIDS has reduced owing to measures to reduce infections and to anti-retroviral therapy (ART) that can control viral loads and prevent the advance of the syndrome. In 2018, it was estimated that 23.3M persons were on ART, 62% of those living with the virus.

## Consequences

From evidence of the impact HIV/AIDS on agricultural households carried out at village and district-level in Eastern and Southern Africa, the main effects of the disease, see Figure 1, are as follows.



### Labour losses

Labour shortages in households living with HIV/AIDS arise when adults become unable to work through illness, as well as through the time taken to care by others to care for them. In time, labour is lost to premature deaths, and for others, to the time taken up by funerals and mourning rites.

Lost time affects production because of the demography of HIV/AIDS. It mainly attacks prime-age, economically-active adults, leaving only the elderly and children to replace the labour lost to agriculture. It also exacerbates the gender divisions of labour. Women are more likely to be infected with HIV than men, owing to their physiology and because they have less control over preventative methods. However, husbands with the virus tend to develop AIDS-associated illnesses and die before their wives. This increases the number of female-headed households. Women take on most of the caring and usually attempt to compensate for the missing labour of their sick husbands.

Reductions in time spent farming, however, are not always that marked. Some households affected by the disease are able to get help from family, friends and neighbours, or to hire in additional hands.

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## Loss of assets and capital

Affected households often not only lose income owing to lost productive labour, but also face additional costs of medicine, fees to doctors or traditional healers, transport to health facilities and other items for the care of the sick. To make ends meet, households thus have to draw down on their assets.

Savings and cash are usually the first to be depleted after the onset of AIDS. After this, items such as furniture, cooking utensils and clothes may be sold off. Finally, households may have to dispose of productive assets such as tools, draught animals, and even land — although in systems of communal tenure land sales may not be an option.

Households lose both working capital and fixed capital. From the little evidence, the loss of capital can be heavy. In Western Kenya households that lost a member to disease spent US\$460 a year on medical expenses and funerals: households with someone chronically sick spent almost US\$200; while those households not directly affected spent just over US\$20 a year. This was then reflected in clear differences in spending on farm inputs: unaffected households spent more, and were rewarded by higher returns to their labour and land.

Widows may suffer further loss of assets. When male heads of household die, widows may be pressured to leave the fields to the late husband's family. In some cases they may be obliged to return to their home village.

## Changing patterns of farming

With less labour and working capital, and in some cases having sold off tools and livestock, affected households often have to adapt their farming. Less land may be tilled, leaving parts of the farm in fallow. Cropping patterns may switch towards food crops to assure survival, and towards crops for which there are lower peak demands for labour — for example, from maize to cassava and sweet potato. Cash crops are particularly likely to be abandoned when adult males fall sick, since they typically attend such crops and have the contacts to market the produce.

Households may sell off large livestock, such as cattle, and use smaller stock units, such as goats or chickens, that can be reared closer to the homestead and be sold off in small quantities to release cash for purchases of medicines for the sick or for basic needs where regular sources of income are lost.

Farming systems may also become simplified because when people die from AIDS. Agricultural knowledge and skills crucial for production are not passed down to the next generation. Furthermore, the context-specific, local knowledge that people use to respond to risks is also lost, as is understanding of local plant varieties.

Thus the impact of the disease on affected households can be cumulative, cutting incomes, depriving them of assets, undermining coping mechanisms and leaving them ever more vulnerable. Poverty, if not outright destitution, and food insecurity seem the fate of many affected households. This has led to warnings of disaster: so-called '**New Variant Famine**', when households affected by HIV/AIDS cannot cope with shocks such as harvest failure, leaving them to face destitution and famine. Fortunately studies report that this has not happened on any significant scale.

## Effects on rural communities

The impact of HIV/AIDS is usually much heavier on persons and households that are poor and vulnerable. For example, in Malawi, Zambia and Zimbabwe studies show that while poor households affected by the disease cut their fields by 40%, richer households cut the area farmed by just 1%.

The epidemic opens up existing lines of cleavage and reflects existing patterns of vulnerability. Hence it may leave in its wake communities where the divisions between the poor and their better-off neighbours are sharper.

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In the wider community mutual support networks that offer some protection against calamity to individuals and households may wither in the face of an epidemic that creates heavier additional demands than the unaffected population can meet.

Prominent community members, such as school teachers, may be particularly prone to infection — thanks largely to their mobility and relative wealth. Their loss can undermine the working of local organisations and institutions. Community-based management of natural resources, for example, depends on both effective leadership and on people having the time to participate in discussions — premises that are less plausible in the presence of HIV/AIDS. Less tangibly, the epidemic may sap morale, encourage despair, and undermine local community initiatives in general.

## **HIV/AIDS, the wider economy and effect on agriculture**

Rural households and communities may also suffer from the impacts that the disease has on the wider economy. For example:

- Government services may be reduced as staff are hit by sickness and death, and as budgets are strained by the costs of the epidemic. FAO report that as much as half of the time of extension staff may be lost to the disease;
- When family living in the cities fall ill this can lead to loss of remittances. If the person returns to the village for the final stages of their illness, there are additional costs of caring. In either case, capital is likely to be lost to agriculture;
- Supply chains for inputs and marketing may depend heavily for their functioning on the knowledge, skills and contacts of a few key intermediaries. Contacts within the chain may be highly personalised, with key knowledge and skills lodged in the heads of these traders. As and when they fall sick, this tacit knowledge may be lost, disrupting the marketing chains; and, possibly most important of all;
- Demand for farm surpluses may be reduced: in countries most affected by the disease, per capita income may fall over the next two decades and the proportion living in poverty rise. Even in countries less affected, economic growth is likely to slow down. The outcome is likely to be a severe curb on domestic demand for farm produce, depressed prices, and a reduced incentive for farmers to produce marketable surplus.

In sum, then, agriculture may be deprived of capital — although not necessarily of labour since even in the most-affected countries rural populations are expected to increase, in a context of weakened supply chains, fewer government services, and lower demand for marketed surplus. Agricultural output will be thus be less than it might have been, and a depressed agriculture will tend to reduce activity in the rest of the rural economy. Indeed, farming may shift towards more extensive production primarily for local subsistence — the reverse, in most cases, of the intensification and increased commercialisation that would mark successful agricultural development.

## **Responses to HIV/AIDS**

### **Content**

**Medically**, the main responses were initially to prevent transmission, largely through campaigns to encourage safe sex and use of clean needles among drug users — supported by distribution of condoms and needles. When ART became available and affordable, this was then rolled out to those living with the disease. Demand to be tested for the presence of the virus was much enhanced once ART was in place and a positive test did not imply early death.

For **livelihoods**, much of the response came from affected individuals, households and communities. This may be termed coping, although often they are better termed as distress responses.

Documented responses include labour sharing, orphan support, community-based childcare, community food banks, credit schemes for funeral benefits, and new ways of reducing the time and energy of domestic tasks, such as fuel and water

collection and food preparation (Mutangadura, Mukurazita, and Jackson 1999; Donovan et al. 2003; Drimie 2003; NAADS 2003; Gillespie and Kadiyala 2005).

In some places, concerns over rising numbers of widows vulnerable to losing their land when their husband died led to changes in customary land tenure norms. Advocates on behalf of widows, such as NGOs, convened with elders and community leaders to agree to modify longstanding practices to accommodate the needs created by the disease. [Aliber et al. 2004 on Kenyan experience]

Social protection was a common response. Slater (2008) summarises typical forms of assistance and their effectiveness:

**Table A: Impacts and appropriateness of various interventions**

Types of intervention	Impact on and appropriateness for HIV/AIDS-infected and affected households
Cash transfers	<p>Social pensions paid to the elderly can be particularly appropriate because of fungibility and the passing of benefits to other household members. Evidence shows that social pensions in South Africa are often used to pay for children's schooling and are not as expensive as is sometimes assumed</p> <p>Enable households to buy medicines so that they are less likely to adopt coping strategies that are ultimately destructive (i.e. drawing down on productive household assets in an unsustainable way)</p> <p>Require transparency, accountability and financial and administrative capacity on the part of governments, otherwise are subject to elite capture</p> <p>Among donors there may be reluctance to commit resources to recurrent welfare budgets, though the HIV/AIDS pandemic is contributing to a rethink of perspectives</p> <p>Child-headed households may not have the capacity to make good decisions about expenditure, though orphan allowances paid to households may</p>



	encourage and strengthen community-based care of orphans
Food and nutrition	<p>Viable long-term safety net for households that are severely labour constrained and cannot participate in social protection programmes that have a labour constraint</p> <p>Less viable for households that are not labour constrained because of danger of creating dependency</p> <p>Donors, because of own grain surpluses, are willing to commit large quantities of food</p> <p>Costly, particularly where there is poor transport infrastructure (for example, sub-Saharan Africa)</p>
Farm inputs	<p>Significantly cheaper than importing food aid</p> <p>Provide seeds and fertilisers to households but are inappropriate for households that are severely labour constrained</p> <p>Could be adapted to provide labour-saving technologies to households</p>
School feeding	<p>School feeding can encourage enrolment and reduce dropouts but unlikely to present enough of an incentive to severely labour-constrained households, particularly child-headed households</p> <p>Take-home rations can support OVC and their households</p>
Public Works Programmes Cash For Work & Food For Work	<p>Can be self-targeting, for example when inferior staple foods or lower wages are paid that richer households will not work for</p> <p>Appropriate for HIV-positive but asymptomatic people, but only if they have a rich, healthy diet. Since this is unlikely, FFW and CFW can be counter-productive</p>

	Inappropriate for labour-constrained households, i.e. those containing people with AIDS and OVC
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Source: Slater 2008, Table 2, edited

Social protection for people living with HIV/AIDS tried first and foremost to defend the consumption of vulnerable people, to prevent them slipping into deep poverty, and to prevent them from either selling productive assets or resorting to work that would have been dangerous, criminal or degrading — commercial sex work being a particular concern. Beyond this, some measures tried to help households that had labour to produce more and enhance their livelihoods in the face of a disease that tended to undermine those livelihoods.

Two lessons arise from social protection in this case:

- When targeting households to for assistance, better to target broadly for all and any households that are vulnerable to deep poverty and destitution, rather than just those living with HIV/AIDS. Singling out households affected by HIV/AIDS risked stigmatising them;
- Take care that spending on social protection does not deprive health and education of funding since these services matter for most households living with HIV/AIDS.

What tended to work best was where the efforts and funds of state agencies and NGOs were combined with community initiatives to provide remedial actions in local circumstances.

In some cases, responses to HIV/AIDS created opportunities to promote the right so women and girls to education, land, and fair treatment. The example mentioned was the vulnerability of women widowed by the disease to losing their land. Because the disease shone a light on this, finding a solution also meant strengthening women's right to land that applied to all women, not just the widows. In this way, some responses had the potential to improve gender equality.

## Decision-making and implementation

The story of HIV/AIDS is strongly political. Initial reactions by some leaders to the disease was to stigmatise the disease and those living with it. Many were reluctant to engage with issues such as the sexual behaviour of the promiscuous and homosexuals, or the practices of intravenous drug users. That meant that many of those infected did not want to be tested or identified.

It took time before groups of those affected and their supporters could overcome resistance, alter the narrative that the disease was sinful, and make sure that internationally fighting the disease was seen as matter of decency and human rights that applied to everyone, no matter their preferences or behaviour.

The political waters were further clouded because of controversies over the source of the virus and potential treatments. Until the science of the origins of the virus in populations of primates was established, all manner of hypotheses circulated, with a wide range of folk treatments being disseminated. These included the disastrous idea that men could cleanse themselves of the virus by having sex with a virgin.

Eventually, most leaders were prepared to accept the science of HIV/AIDS, and to recognise it as health crisis that potentially could affect anyone, and therefore a matter of human rights. The push for a more considered reaction to the virus was enhanced when ART became available at scale, lifting much of the dread of infection.

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Most observers report that the effectiveness of medical and livelihoods interventions improved when local leaders and communities were engaged. This ensured that locals appreciated the science, while outsiders could appreciate how the disease affected local communities and the varied impacts it was having.

## Key lessons

Medical advances can change the face of a disease. Before ART, to be HIV-positive was a death sentence. Those positive were readily stigmatised by others, some took on a mantle of shame. The advance of a novel virus that insidiously infected people who would not know of their fate for months if not years, was seen with dread. Self-help groups of those infected could easily become forums of little hope.

When ART started to be rolled out, a plague became a disease, something that could be treated. This gave hope to those infected and everyone working with them.

Much of the response to the effects of the disease came from individuals, families and communities who had to find ways to counteract the losses caused by the disease.

Public interventions to assist those living with HIV benefited from engagement with communities.

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## G.China COVID-19 impacts & responses

### What happened? Causes, Consequences

The COVID-19 outbreak began in the city of Wuhan (capital of Hubei Province) in December 2019. On 23 January 2020, a nationwide travel blockade and quarantine policy was published by central government, requiring all public spaces, businesses, and schools to shut their doors until further notice. The policy also placed restrictions on individuals leaving their homes or travelling.

By 24 April 2020, the pandemic had killed 4642 people and infected 84, 311 others.<sup>19</sup> According to government figures, the economy contracted 6.8% over the first quarter of 2020, the first recorded contraction since Mao era collectivisation was abandoned in the late 1970s. Others reckon the economy shrank by as much as 10%.<sup>20</sup>

### Responses

Lockdown measures began during the annual Spring Festival (Chinese Lunar New Year) in mid-January, when roughly 200 million migrant workers return to their registered homes in rural areas<sup>21</sup>. The lockdown prevented return journeys and closed down work in rural areas, curtailing the spread of the virus, but also hitting rural incomes (see below). For migrant workers dependent on wage labour in China's towns and cities, and rural families dependent on urban remittances, impacts have been significant (ibid).

Lockdown measures were implemented across urban and rural areas, although the measures employed and levels of restriction varied, depending on policy makers' estimation of risk and the feasibility of using different instruments. Overall, the government deployed an impressive arsenal of tools, from high-tech surveillance, monitoring and messaging, to low-tech blockades and mass-mobilisation of party members, civil servants, army personnel, NGO staff, retirees and 'private' workers following party orders.<sup>22</sup>

Ensuring availability and access to food has been a top priority for the government. On 25 Feb, China's President Xi Jinping and Prime Minister Li Keqiang issued instructions on the need to 'stabilise agriculture', calling for an 'all-out effort' to ensure the epidemic did not affect the planting of Spring crops. At the same time, officials at all levels have been told their performance (and therefore pay & promotion) will be judged by farmers' success in securing inputs, planting crops, and in ensuring smooth food distribution.<sup>23</sup>

In terms of specific responses, the government has prioritised 'green channels' for supply of farm inputs and distribution of fresh produce, and provided financial incentives to farmers via lower taxes, and access to cheap credit. In some cases, government has stepped in to directly contract farmers to supply produce to needy areas, and has instructed China's biggest food & agricultural firms to step-up supplies of rice, meat & cooking oil.

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<sup>19</sup> WHO COVID-19 [Dashboard](#), accessed 24 April 2020 at 15:30.

<sup>20</sup> [The Economist](#), 26 March 2020.

<sup>21</sup> Rozelle et al in [IFPRI](#), 30 March 2020

<sup>22</sup> [NYT](#), 20 Feb; [WEF](#) 12 March; [East Asia Forum](#) 7 April. Note: China's bureaucracy is 40 million members strong, and covers a much wider swath of society than is typical in most countries.

<sup>23</sup> Chen et al in [IFPRI](#), 12 February; [The Economist](#) 14 March; Rozelle et al in [IFPRI](#), 30 March.

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Impacts? We have some emerging and pretty robust evidence: phone surveys, media reporting, government announcements/guidelines:

- Strict lockdowns were enforced in all surveyed villages, and were very effective in controlling spread of the virus. Only four village informants out of 726 reported COVID-19 infections in their villages, and of the nearly 700,000 residents in these villages, only about 10 had contracted the virus. No one in any surveyed village reported deaths from the virus.<sup>24</sup>
- Lockdowns have caused hardship, however. Roughly 75% of informants stopped work (farm, off-farm, urban); over 90% reported loss of income; nearly 50% reported impacts on diet. After one month of COVID-19 restrictions, China's economy lost around US\$100 billion in rural migrant worker wages alone, before factoring in losses from rural (non-migrant) labour/employment.<sup>25</sup>
- There have been some shortages and price spikes (especially for poultry & pork), but supplies of staples, fruit & veg have been adequate in most areas.<sup>26</sup>

Travel and lockdown restrictions in Wuhan, the epicentre of the outbreak, were lifted on 7 April. In other areas, in March. While schools and colleges remain closed, businesses and public spaces are re-opening, and migrants are returning to work – once they successfully complete a 14-day quarantine.<sup>27</sup>

## Lessons

- Learning lessons from the SARS outbreak in 2003, the Chinese government reacted swiftly to the COVID-19 outbreak in Wuhan, implementing a nationwide travel blockade and quarantine policy across rural and urban areas.
- The government deployed an impressive arsenal of tools and approaches to prevent transmission, from high-tech surveillance and monitoring to the mass-mobilisation of party members. Measures were effective, even though China's reporting of COVID cases has been questioned.
- Lockdowns have caused hardship in rural areas, however, not least because rural incomes are increasingly tied to remittances from rural-urban migration. Many migrants have faced lockdown in their 'home' villages during New Year; unable to return to work in towns and cities, wages stopped more or less overnight.
- A key concern of government has been agricultural production and distribution to ensure food availability and prevent price spikes. Policies – from the setting up of frictionless green channels on the country's road network, to fiscal incentives for farmers – appear to have been effective.

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<sup>24</sup> See note 3 above.

<sup>25</sup> See note 3 above.

<sup>26</sup> See notes 3 & 4 above. Plus personal communications with colleagues in Beijing and Shanghai, 6-13 April 2020.

<sup>27</sup> [The Economist](#), 26 March 2020; [NYT](#), 8 April 2020; plus personal communications with colleagues in Beijing and Shanghai, 6-13 April 2020.

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## H. SARS, China

### What happened? Causes and consequences

The SARS coronavirus (SARS-CoV) was identified in 2003, and is thought to be an animal virus from an as-yet-uncertain animal reservoir, perhaps bats, that spread to other animals (civet cats) and first infected humans in Guangdong Province, southern China, in November 2002.

The SARS epidemic affected 26 countries and resulted in more than 8000 cases in 2003, primarily through person-to-person transmission. Of these, 774 people died, mostly in China (349), in ill-equipped health care settings. The economic cost (international) has been estimated at US\$30 billion over a 6-month period.

Other countries/areas in which chains of human-to-human transmission occurred after early importation of cases were Toronto in Canada, Hong Kong Special Administrative Region of China, Chinese Taipei, Singapore, and Hanoi in Viet Nam.

### Responses

The first cases of severe acute respiratory syndrome (SARS) are thought to have occurred in China Guangdong Province in November 2002. Local health personnel reported to superiors about the new disease in mid-December 2002, but, given restrictions on the release of public health-related information, it was not till February 2003 that Guangdong health officials made a public announcement about the disease. The first nationwide alert was issued in early April 2003 and a coordinated and effective campaign to combat SARS in China began in mid-April.

Word of mouth about the disease spread quickly both inside and outside China in early 2003. Millions of text messages were sent referring to a 'fatal flu' in Guangdong Province, pharmacies were stripped of antibiotics and flu medications, and there was panic buying in shops.

The first recorded case in Beijing occurred on 5 March, and the numbers of probable cases accelerated quickly. Nonetheless, Chinese health authorities, knowing they were dealing with an epidemic of SARS, continued to parrot the line that there was nothing to worry about, in part because the government as a whole was preoccupied with planning for the National People's Congress in March, heralding in a 'new' government.

The official response only changed when 72-year-old doctor, Jiang Yanyong, contacted the foreign media and WHO began an investigation. Two weeks later the government fired the health minister and mayor of Beijing, dramatically raised its estimate of deaths, and began a nationwide campaign alerting the Chinese to the dangers.

In the weeks that followed, the Chinese government launched a crusade against SARS, effectively bringing the disease under control in late June and eliminating all known cases by mid-August. By May 7, 18,000 people had been quarantined in Beijing. The Maoist "Patriotic Hygiene Campaign" was revitalized. In Guangdong, 80 million people were mobilised to clean houses and streets.

When widespread quarantine was imposed in China and social disruption occurred in April 2003, the peak of the original Guangdong outbreak was long past.

As part of the nationwide mobilisation campaign launched in April 2003, the State Council sent out inspection teams to 26 provinces to check for unreported cases and ensure compliance with new quarantine and travel restrictions. Lower level officials went from under-reporting cases to implementing lockdowns with new-found political zeal. They sealed off villages, apartment complexes, and university campuses, quarantined tens of thousands of people, and set up checkpoints to take temperatures. In the countryside, virtually every village was on SARS alert, with roadside booths installed to examine all those who entered or left.

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Very little information is available on the impact of SARS on agriculture, food systems and rural livelihoods more broadly. Our quick review draws the following, tentative conclusions:

- There were reports that SARS outbreak delayed China's winter wheat harvest by two weeks because farmers could not travel to the field or access inputs. However, this does not appear to have had any significant impact on production.
- There were newspaper reports (Asian press outside China) of food market panics in Guangdong and Zhejiang as rumours spread of a 'killer flu'. However, food supply and prices nationwide were broadly stable.
- Official news reports acknowledge the impact of the SARS lockdown on rural incomes – farm, off-farm and remittance. Nonetheless, official figures indicate that agricultural incomes and production both *grew* during 2003, albeit at a lower rate than planned.

## Lessons

The government's attempt to cover-up and then downplay the SARS epidemic in early 2003 backfired badly. Under intense domestic and international pressure, leaders made a dramatic *volte-face* in April, launching a nationwide 'crusade against SARS', bringing the disease under control in late June, and eliminating all known cases by mid-August.

In initiating its campaign, the government did little to consult or inform local people. Instead, the government relied on its extensive array of mobilisation vehicles installed in the Mao era—village party branches, street sub-district offices, former barefoot doctors—to take temperatures, quarantine people, trace infections and round up laggards. The response to CODID-19 has been strikingly similar, albeit with the added deployment of China's high-tech surveillance and tracking systems.

Impacts in rural areas are difficult to identify with confidence. There were reports of delayed harvests, localised price spikes and impacts on rural incomes, but nationwide, and over the full year (2003), impacts appear to have been modest.



## I. 2007/08 food price spike

### Nature of the shock: Process, causes, consequences

Between September 2007 and April 2008 the prices of maize and wheat on world markets roughly doubled, while those of rice tripled. (Figure A)

The spike in prices of cereals on world markets in 2007/08 was as unwelcome as it was unexpected. Nothing similar had been seen for more than 10 years: indeed, the last time cereals prices had spiked to such a degree was in 1973–74 — 34 years earlier.

For poor and vulnerable people the spike spelled hardship as the costs of cereals in many parts of the developing world rose sharply. For leaders, it came as a shock given that for more than three decades previously, real food prices had fallen on world and many national markets. The benefits of the green revolution had come to be taken for granted.

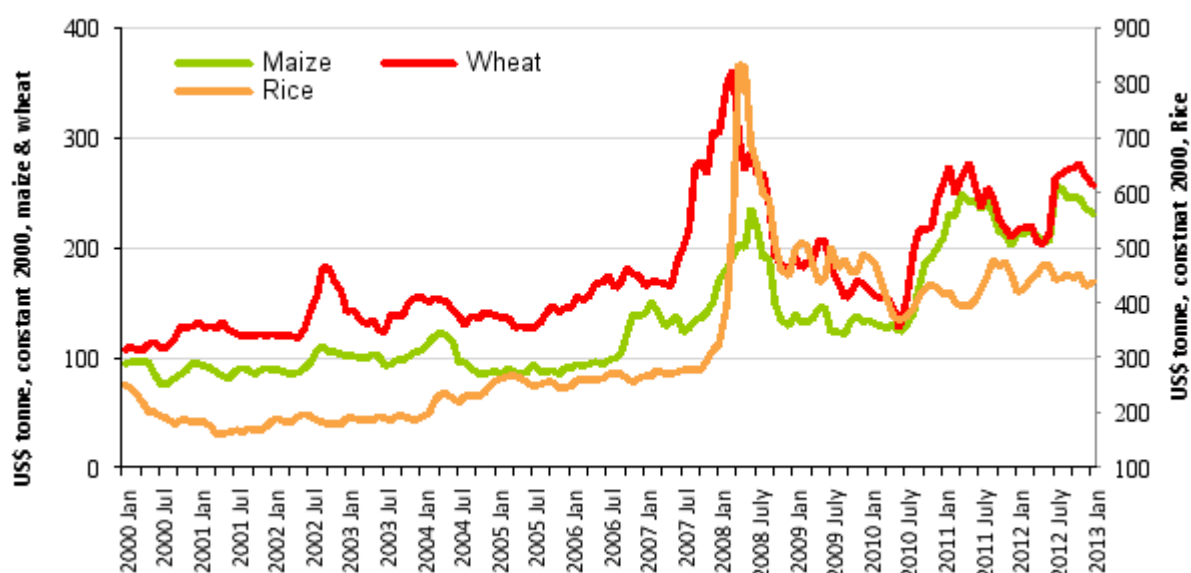


Figure A: Prices of maize, rice and wheat 2000 to 2012, constant US\$

Source: Compiled from IMF commodity statistics, deflating prices by the US GDP deflator

### Causes

At the time of the spike, much debate arose about its causes. In broad terms, explanations divided into two wings. One argued that the spike signalled a sea change in conditions in the markets, a symptom of a broken and unjust food system that would never again be the same. The era of low prices for staples, one that had seen a long-term trend for falling real prices for at least 60 years, was over. The other wing argued that the spike was the result of a 'perfect storm', where several factors had converged to create any extraordinary event — with the implication that once the conjunctural factors faded or passed by, prices might return to something like their pre-spike levels in real terms.

With the benefit of hindsight, and the knowledge that within five or so years prices would indeed fall back to their previous low levels, it is clear that the latter explanations were more satisfactory. So, what were the factors that converged to create the spike?

The argument here distinguishes the ***conditions that made possible the spike*** — mainly a slowdown in the growth of cereals production, stocks depleted to a level at which short-term shocks could not be accommodated, rising oil prices and the associated extraordinary increase in the demand for US maize to be distilled to ethanol; ***short term triggers*** of harvest failures and biofuel mandates that accelerated price increases; and the ***very short term, anxiety-driven overreactions*** of governments, traders and consumers whose restocking, export limitations and hoarding aggravated the initial price increases to produce an extraordinary spike. (Table A)

**Table A Causes of the price spike**

Build-up	Triggers	Overreaction
Slowdown in cereal production	Harvest failures	Export bans
Low stocks of cereals	Biofuel mandates	Restocking in a tight market by state procurement agencies, supermarket chains
Rising oil prices & demand for ethanol		

The relative importance of the different factors has been debated. The spike, however, arose from the interplay of several factors: in the absence of most of which the spike would not have occurred; hence it is difficult — and potentially misleading — to apportion weights to these.

Most of the contributing factors outlined in Table A are reasonably well understood and agreed: but contention remains over the role of **index investment** (**'speculation'**) on futures markets for maize and wheat.

Despite the many papers addressing this issue, the arguments continue. To some extent this reflects the technical difficulties of proving the argument one way or the other; but those with opposing views tend to cite different literature and adopt different standards of evidence. The balance of the evidence seems to show that index investment may have exacerbated the spike in maize and wheat prices, but that this cannot explain more than a small part of the large price increases seen. That the largest spike occurred for rice for which there was little or no such investment also suggests that this was a minor factor.

## Consequences for prices on domestic markets

***How much did increases in cereals prices on international markets push up domestic prices in developing countries?*** Three broad patterns of transmission can be identified. Very large Asian countries, such as China and India, were insulated from world markets by large (and costly) public stocks and restrictions on trade. Other developing countries with reasonable access to world markets saw a significant if muted transmission to their markets, so that domestic prices of staples rose considerably, with rises in the range 30% to 70%. A third group of countries, mainly low-income, especially in Africa, were insulated from world markets by high transport costs; and in some cases additionally by the importance of little-traded staples such as cassava, yams, millet and sorghum in local diets. Food prices in these countries depended far more on domestic harvests, and in some cases on restrictions to trading regionally with neighbouring countries, than on world prices. In some parts of inland Africa food prices rose at the same time as the spike on world markets, but domestic inflation and harvest losses were probably the causes, not the international price spike.

## Impacts, especially on vulnerable people

Even five years after the spike, impacts were not entirely clear. Models and surveys deployed soon after the spike predicted hardship and suffering for households vulnerable to rising food prices. Yet subsequent national surveys suggested less harm: indeed food security and nutrition actually improved in some developing countries.

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This is not so surprising: changes in food prices are only one factor affecting income, food security and nutrition. At the time of the price spike developing countries were also experiencing rising costs of fuel as the oil price soared, the start of the effects of the financial crisis of 2008 in Europe and North America, and, most important of all, the performance of their own economies in creating jobs and incomes — and of their governments in providing public goods, services, and social protection. Trying to separate the effects of higher prices for staple foods from other confounding variables is a challenge.

Time scales complicate these judgments. Short-term impacts of higher prices can be strong since there is little time to adjust consumption or to earn more from the opportunities that come with higher prices. With time, however, households, farms and firms may adjust, public policy responses may help, so that negative effects may be much mitigated. On the other hand, with time short-term coping may prove difficult to sustain and vulnerable households may slide into deep poverty and destitution as they exhaust their options.

Any rise in prices of essential items such as staple foods entails hardship. The more important question is whether the price spike resulted in temporary hardship for vulnerable households, or whether it led to permanent damage. If this latter were the case, then it should show up in the nutrition of infants: they are usually the most vulnerable members of vulnerable households. Yet the statistics from national surveys conducted before and after the spike do not show a general trend towards damage: on the contrary, in 37 out of 52 countries, child nutrition improved rather than worsening.

A simple interpretation may be that for some vulnerable households, the price spike was not much of a problem provided that the household lived in a fast-growing economy with a reasonably competent government capable of providing the public goods and services to spread the benefits of growth, and able to protect the vulnerable. Those vulnerable households living in countries with slow growing economies, on the other hand, with governments barely able to fulfil their functions and unable to react effectively to the spike, may well have suffered.

## Responses to rising food prices

### Content

**International responses** fell into three major categories:

1. Collecting and disseminating information internationally, to assess the crisis and its implications, to mobilise and coordinate responses;
2. Technical advice to national governments on how to respond, particularly on identifying the vulnerable;
3. Funds and in-kind donations to:
  - **Stimulate agricultural production** — mainly through seed and fertiliser distribution;
  - **Provide food aid, health and nutrition programmes** — with assistance from UNICEF, WFP and WHO; and,
  - **Expand (support or in some cases implement) other safety nets.**

The international community mounted a response to the food price crisis of 2007/08 that was remarkable and admirable for its size and urgency.

**Responses were heavily conditioned by how different agencies perceived the crisis.** Humanitarian organisations, for example, tended to see the crisis as exacerbating costs of food aid, undermining cash transfers, and adding extra demand for safety nets. They responded by securing more funding and expanding safety nets. Development agencies

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saw higher prices arising from low production and stocks of staples, and hence responded by promoting agricultural production, and in some cases taking steps to increase (often humanitarian) cereal reserves. Other agencies took the perspective of developing country governments. They saw the crisis eating into the budgets of low-income countries attempting to stimulate national production or cushion their vulnerable populations from price rises, so they provided funds to pay for these, and in some cases to compensate for budget losses arising from reduced import taxes, higher fuel bills and the like. When they saw governments struggling for lack of administrative capacity, they helped with technical and financial support.

***Were these efforts directed to the right place and people?*** By location, the agencies seem to have chosen the right countries to focus their efforts. Only nine out of 123 countries seemed to receive more or less attention than might have been expected. It is not clear, however, if the neediest locations within countries were reached, as it is difficult to find information on the extent to which spatial mapping of sub-national vulnerability influenced decisions. Rural areas seemed to get less attention than urban in many cases. In this respect, targeting was misinformed. The typical expectation was that urban households would be harder hit than rural ones since it was assumed that the latter would not have to buy in food. In fact, many of the rural poor — who were often poorer than their urban counterparts — relied heavily on buying in food and so were hit hard.

Socially, not enough is known about whether or not the right people within selected locations were reached. In some cases, reaching the neediest was too difficult at short notice.

***Were the responses the right ones?*** Most responses fell into two categories: stimulating production and protecting vulnerable people from high food prices. Broadly, these responses were appropriate, but perhaps not always entirely accurate. In addition to the questionable assumption that problems were more severe in urban areas, it was also often thought that the prime cause for concern was adding to the numbers in poverty, rather than the increased poverty of the already poor. Much of the urgency of the international response was stimulated by the estimate of an extra 100 million or so being added to the numbers of the hungry; rather than the worsening fate of the 850 million who were already hungry, ill-placed to cope with extra strain on their access to food. An earlier review found that not all of the predicted impacts of higher food prices were entirely as expected

As predicted, high food prices increased malnutrition (especially in young children) and poverty. Some findings were less obvious. These included: the depth of the impact in rural areas, the increase in inequality; the widespread use of credit to buy food, and the fact that most poverty impact came from increasing depth of poverty in the already-poor, rather than increased 'poverty headcount.' (Compton et al. 2010)

***How effective were these responses?*** Responses were not as timely as would have been ideal. Inputs were delivered but many arrived after the first half of 2008, when crops were planted in the Northern Hemisphere. Some individual programmes report positive impacts on people's food security.

***Safety nets were similarly delayed:*** most got going by late 2008 and early 2009, when prices had been high for some months. Less is known about their effectiveness. Some reportedly suffered from implementers' capacity constraints, overly complex targeting, and insufficient attention to women. There were also not enough attempts to examine relative effectiveness of implementing one type of safety net compared to another. In many cases, school feeding programmes were the focus because, unlike more sophisticated social protection programmes, they already existed in many low-income countries and could be scaled up relatively quickly.

There were furthermore some reports that initiatives to respond to crisis took priority over existing programmes. Higher food and fuel prices meant some programmes already underway had to be scaled back, even as funds were allocated to the new responses.

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A final reflection concerns the evaluation deficit. While it may still be early to ask questions about impacts of these responses, not all agencies have made sufficient attempts to evaluate their response. Most reporting stops at outputs without consideration of impacts or outcomes. Very few evaluations of what was done are available; exceptions being for FAO's TCP responses, and for some WFP and DG-ECHO programmes in place at the time of the food crisis. And while these studies did the best they could given limited time and data, they still leave some questions unanswered.

**Most governments** tried hard to react to higher world food prices. **Low-income countries** (LIC), however, despite the additional aid many received, struggled to make a difference. They had few means by which to mitigate price rises, either at the border, or on domestic markets. Most of the buffering of international price rises came through the natural protection of high transport costs to ports. Not that this was necessarily an advantage for those LICs distant from the sea: that protection usually left them highly vulnerable to price volatility from domestic harvests.

When it came to protecting vulnerable citizens, again LICs often faced the twin challenges of not having safety nets in place — both policies and agencies — that could be scaled up when prices rose, combined with not enough resources to provide adequate protection in countries where half or more of the population were in danger of impoverishment and hunger.

Most countries tried to stimulate domestic production. Again, however, LICs had few means by which to do so: distribution of seed and fertiliser were costly exercises, while promising farmers higher prices was unthinkable for lack of funds.

**Middle-income countries**, on the other hand, often had more scope for action, thanks to their greater administrative capacity, deeper funds to draw on, and often a smaller share of population to protect. Where agriculture had a smaller share of the economy, offering farmers higher prices or subsidised inputs was feasible.

Having the means and acting effectively or efficiently, however, were not necessarily linked. For example, Argentina tried to protect consumers by restricting and taxing food exports, the main effect of which was to undermine production that made it all the harder to hold down domestic prices.

Across countries, higher food prices were commonly seen as a threat to the lives of poor urban households with less appreciation that poor rural households might be equally vulnerable. In any case, for many countries it was administratively easier to protect urban rather than rural households. Urban households, moreover, were better placed to protest in the face of price increases. Hence responses tended to show a bias to urban areas.

Overall, most surveys report that not many vulnerable households received assistance from the state during the food price spike. Despite considerable public efforts, for most threatened households it was their own ability to cope that mattered.

## **Decision-making and implementation**

**Decisions** were much influenced by analysis of the causes. Those who saw the price spike as the outcome of a perfect storm of conjunctural factors, saw solutions as being to remedy or more of those factors. That tended to lead to the following favoured responses:

- Suspend biofuel mandates
- Build modest public stocks of cereals, mainly for food aid
- Grow more cereals as soon as possible

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- Provide more information on markets, advocate against export bans.

One might add, 'do not overreact'.

Those, on the other hand, who saw a more systemic malaise proposed more radical action including:

- Build very large public stocks
- Ban or heavily control speculation on futures markets
- Create funds to counter speculators on futures markets.

They believed that it was time for governments and multilateral agencies to intervene in cereals markets.

Because the latter set of proposals would have required both considerable international consensus, coordinated action and funding, the proposals were easy to resist when significant actors were unconvinced. In G8 meetings, most leaders were averse to the more radical proposals.

In responding to the immediate distress caused to those low incomes seeing higher prices for staples, there was widespread consensus on the need for forms of social protection.

### ***Implementation***

As noted above, it was easier to implement responses where systems already existed and could be ramped up, above all for social protection payments.

## **Key lessons**

When crises break suddenly and unexpectedly, some governments, firms and households may overreact — and those actions can aggravate the initial crisis very considerably.

It is easy to overreact to unexpected and unwelcome shocks, seeing them as almost inevitable outcome of broken systems, rather than accepting that complex systems will occasionally and randomly generate shocks.

Running down stocks of cereals was unwise: traders knew well the levels of stocks typically necessary to keep prices within a band no matter the occasional harvest failure or surge in demand. For several years, it was clear that ratios of stocks to annual average demand were too low. Neither traders nor governments paid enough attention to act to change this. Perhaps 34 years without a price spike had bred complacency.

Some initial assessments of the effects of the price spike were indiscriminate and exaggerated. Those assessments tended to see all LICs as likely to be hard hit, saw the urban poor as the hardest hit. Hardly anyone was prepared to admit that higher food prices might favour rural poor households who depended on farm labouring for their incomes.

## **Responses**

Efforts to contain prices domestically were only possible for large countries with considerable grain reserves, above all China and India. LICs in particular struggled to influence market prices.

Some LICs did not see much transmission from world market prices, since they were landlocked with very high costs of access to the world market — for example, Malawi, Burkina Faso, Ethiopia. So long as their domestic harvests did not fail, events on the world markets had little influence on domestic prices.

Providing social protection to vulnerable households was only possible for countries that

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- (a) had the means to finance this — LICs where most households were vulnerable simply could not fund this; and,
- (b) had social protection schemes already in place, with registered eligible households, and with agencies and systems in place to deliver additional benefits.

In most countries, and for most vulnerable households, their defence against the hardship of higher staple food prices was whatever the household, with support from kith and kin, could manage. [This has been observed time and again in rural Africa: see for example the 1991/92 drought in Zimbabwe] *This is a massive lesson with profound implications.*

Both international coordinated efforts and those of many governments in the developing world was to try to ramp up the next food harvest, through public distribution of food, fertiliser and other crop inputs, and in some cases by making electricity for irrigation pumps free of charge.

Some observers derided these efforts. They believed that smallholders faced too many obstacles to react within one harvest to the spike. They were proved dramatically wrong. Supply response, aided by determined public action meant for the next five years or more cereals harvests were substantially larger than before the spike, and in excess of demand. The largest increases were seen in countries where smallholders dominated farming, in Asia and Africa. It was this supply response that killed off the spike, with prices on world markets settling back to pre-spike levels, in real terms, by 2014 or so.

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Keats, Sharada, Steve Wiggins, & Edward Clay, 2011, **International rapid responses to the global food crisis of 2007/08. Three years on: How relevant, effective, and efficient were international responses to food price rises across the world in 2007/08?**, Project Report, Overseas Development Institute



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## J. 1997 Asian financial crisis

### Nature of the shock: Process, causes, consequences

The financial crisis broke over Southeast and East Asia in late 1997 and 1998. Private investors, both within and outside the region, were spooked that a credit bubble was about to burst. They took flight, taking capital out of the region, and converting as much domestic currency into dollars as possible. As they did so, domestic currencies depreciated and central banks began to run out of foreign reserves.

Currency depreciation pushed up domestic prices. It made repaying dollar-denominated private debt much harder.

Most affected countries were Korea, Indonesia, Malaysia, Philippines, Thailand.

Causes of the crisis were disputed, with some arguing that this was a financial crisis caused by opening up capital markets unduly and by the herd behaviour of uninformed investors. Others, above all the IMF, saw it as the consequence of defects in the economic structures — crony capitalism, inefficient state enterprises, etc. — of the affected countries, that needed structural reform.

Faced by a macroeconomic crisis, the IMF played a prominent role in offering the most-affected countries some assistance, but only in return for conditions that included 'reforms'. These stressed austerity measures, with control of money supply, high interest rates; plus privatisation of state enterprises and liberalisation of financial systems. The effect of austerity was to push many domestic firms into bankruptcy, with increased unemployment, downward pressure on wages, and downward multiplier effects throughout the economy. GDP and incomes fell.

The IMF role was to be heavily criticised, not least by Stiglitz, leading to a loss of prestige and its position as leader of a cartel of like-minded institutions lending to MICs.

For most countries, with the exceptions of Indonesia and the Philippines, recovery from the shock was relatively rapid — within at most four years, most economies had returned to their former level of GDP, with strongly growing economies and booming exports — in part facilitated by depreciated currencies.

In the meantime, most of the population saw their lives and livelihoods affected by:

- Loss of jobs or falls in wages or both;
- Rising prices for basic commodities cutting the purchasing power of their diminished incomes; and,
- A squeeze on social services as governments tried to balance their budgets in line with IMF instructions.

Impacts were considerable for most households. By and large, they were able to protect core elements such as food spending, although they may have economised on higher-cost items, and education of children. Many switched away from private health care to depending on state facilities, that were not only under pressure but were in some cases operating with reduced budgets. In some households, the search for additional work to make up for lost income drove women to work longer.

Crisis made clear that the vulnerable included many people who had previously not been seen as poor.

### Responses

#### Content

The immediate response was to try to tackle the macroeconomic imbalances in which the IMF played a key role in almost all countries, save for Malaysia that took different measures. IMF advice was monetarist and deflationary, and

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ideological seeing any elements of state control of the economy and enterprise as defects to be remedied. Camdessus, the IMF director, even saw the crisis as a welcome opportunity to put the region to rights.

World Bank tried to help out with its favoured safety nets.

Governments responses were diverse, but included:

- Introducing ***social protection for workers*** that was universal, including unemployment benefit and health care. Done in the better-off economies: Korea, Malaysia, Thailand;
- Providing ***support for small and informal businesses in credits and grants*** — often successful;
- ***Grants and credits to community organisations*** to ameliorate local conditions — again, often favourably reviews; and
- Attempts to ***control prices or to provide staple foods and other necessities at subsidised prices*** with mixed results at best; and,
- ***Safety nets such as public works employment***, often criticised for poor design and implementation.

Table A summarises the diverse experience of various forms of social protection.

**Table A Summarising social protection responses to Asian financial crisis by country**

Source: Bhushan & Blouin 2009

Country	Pre-crisis	Responses to financial crisis
Korea. Rep.	Had a relatively well-developed livelihood protection system that in 1997 provided income support to 1.2M. Unemployment insurance since 1996 on OECD entry.	<p>In response to the insolvency of 3,323 small and medium enterprises in the first month of 1998 alone, the Tripartite Commission (business-labour-government) launched sweeping legislation extending unemployment insurance to all sections of the labour force.</p> <p><b>Temporary Livelihood Protection Program (TLPP)</b> to absorb the newly unemployed, covering an additional 310,000 persons: direct cash transfer (\$70/month), tuition fee waiver and lunch subsidies for school-aged children, and a 5% reduction in medical insurance premiums for one year.</p> <p>Successful: elements made permanent in 2000 <b>Minimum Living Standards Security Act</b>. Provides for food, clothing, housing, education, and health care—subsidised through cash and in-kind transfers for households that otherwise would not meet the basic living standard. Have to participate in public works and job training.</p> <p><b>Korea's Employment Insurance System (EIS)</b></p> <p>Benefits in Korea are universal, with no <b>costs or exclusion through targeting</b>.</p> <p>In sum, post-crisis unemployment reforms in Korea followed a four-pillar approach: job security, job creation, training and placement, and livelihood care</p> <p>Korea epitomizes productivist East Asian welfare where investment in social protection, though limited as a percentage of public spending, focuses on education and health care (i.e., human capital development).</p>
Malaysia	<p>History of well-organised labour with trades unions. Following were in place:</p> <p><b>Employee Provident Fund (EPF)</b> 1951 — bulk of social protection.</p> <p><b>Employees Social Security Organization (SOCSO, 1971)</b></p> <p><b>Social Security Act (SSA, 1969)</b></p> <p>Informal safety nets along ethnic lines to compensate for the low level of coverage of the formal safety nets.</p>	<p><b>Reforms to existing provisions:</b> In 1994 the EPF was made flexible by splitting each account into three:</p> <p>60% held for retirement after age 55;</p> <p>30% for large one-time expenses such as housing —important during crisis year as housing interest rates rose rapidly; and</p> <p>10% for medical emergencies. Flexibility in the EPF made for better monitoring of withdrawals and expenditures.</p> <p><b>Expansion of existing safety nets</b> to cover retrenched workers entering the informal sector: Under the <b>Amanah Ikhtiar Malaysia (AIM)</b> revolving fund, RM300 million in interest-free loans were disbursed. Successful: 100% repayment of loans.</p>

	<p>Employment acts protected against dismissals, covered 2/3rds of employees in 1997. At most unemployment rose by 3.2% during crisis.</p>	<p>Crisis used as an opportunity to strengthen entrepreneurial capacity in informal sector by launching the <b><i>Yayasan Tekun Nasional entrepreneurial loans scheme</i></b>, the <b><i>Graduate Entrepreneurs Scheme</i></b>, and the <b><i>Economic Business Group Fund</i></b>, which provides assistance to women entrepreneurs. All seen as successful in stimulating enterprise</p>
Thailand	<p>Lacked universal unemployment insurance and health and education coverage.</p> <p>Social protection for government employees. Extensive and comprehensive:</p> <p>Largest is private provident fund established by government decree, including <b><i>Civil Servants Pension Fund, Social Security Fund, and Provident Fund</i></b>.</p> <p><b><i>Social Security Act (1990)</i></b> and <b><i>Labor Protection Act (1998—post-crisis)</i></b> provided limited unemployment benefits for non-government employers and employees.</p> <p>Early 1990s: government set up the <b><i>NGO Coordinating Committee on Development (NGO-COD)</i></b>.</p> <p>Supported community organisations, women's groups, and child development centers since the 1970s. The <b><i>Social Investment Fund (SIF)</i></b> and the <b><i>Regional Urban Development Fund (RUDF)</i></b> financed community-based, demand-driven projects: apparently successful.</p>	<p>Amid civil society criticism of austerity policies recommended by IMF, government introduced by 1999 four fiscal stimulation packages containing elements of social safety. These were:</p> <p>a <b><i>social sector program loan</i></b> (Asian Development Bank funded);</p> <p><b><i>loans under the Miyazawa Plan</i></b>. [Named for Japanese finance minister who committed over US\$30 billion in loans to the most-affected countries to help them restructure the corporate and banking sectors, establish or improve social safety nets, and alleviate the credit crunch].;</p> <p><b><i>Unemployment Mitigation Program</i></b> (1998) included innovations such as the "Thai help Thai" social protection, provisions for job creation, repatriation of workers, promotion of Thai workers working abroad, and employment of university graduates.</p> <p>Mixed reviews: need for better planning and coordination to avoid overlaps; targeting (especially wage setting for public works); and enforcement of laws (such as minimum-wage enforcement even when people are willing to work for much less); and,</p> <p><b><i>Social Investment programs</i></b> (World Bank funded): one channel supported existing public programs and employment creation; while another focused on bottom-up local community building. Latter drew on Thai experience of civil society organisations.</p> <p>Seems that NGO-COD-backed SIF and RUDF were scaled up. Communities learned to plan, invest, assume debt. Projects undertaken resulted in small irrigation and other infrastructure repairs and tourist facility improvements. Provided employment to groups, such as women, that labour-intensive workfare can miss.</p> <p>Funds had a clear exit strategy (known to participants) were terminated at the end of 1999. In this way, Thailand avoided the fiscal trap that often accompanies such programs.</p> <p>Post-crisis, Thailand has experimented with universal schemes, most prominently the <b><i>"30 baht scheme"</i></b>. Some universal programs have been criticised lately for being too expensive and unnecessary. These include the <b><i>Universal Health Scheme (UHS)</i></b>, which provides universal health coverage at a set amount of 30 baht for all citizens: relatively effective and has found international support, particularly from the WHO and the ILO (Hewison, 2006).</p>

		<p>Schemes such as the <b>Village Community Fund</b>, which provides low-interest loans of 20,000 baht to individuals in every village, have also received criticism.</p> <p>Another post-crisis scheme, the <b>Voluntary and Low-Income Health Cards</b>, though expensive, is believed to have genuinely facilitated the delivery of basic services in remote regions.</p>
Indonesia	<p>Less well prepared than neighbours</p> <p>Fewer community organisations</p> <p>Long history of geographically and individually targeted poverty alleviation programs, such as the 1970s <b>INPRES (Instruction of the President of the Republic of Indonesia) programs</b> financed through windfall oil revenues.</p> <p>Provided education for children through the building of some 60,000 schools in the mid-1970s alone</p> <p>Common complaints in the health care initiatives, however, included poor targeting, lack of data, inconsistent data, and lack of administrative capacity.</p>	<p>Government's response stymied by an inadequate bureaucracy, absence of early warning signals, and the lack of reliable and timely basic poverty data. Responses focused on:</p> <ul style="list-style-type: none"> <li>• Securing affordable food supply,</li> <li>• Supplementing purchasing power,</li> <li>• Preserving access to health and education, and</li> <li>• Sustaining community activity through regional block grants and small-scale credit.</li> </ul> <p><b>Public works program (Padat Karya)</b> had wage rates were set above the minimum wage, creating distortions and diverting labour away from other sectors like harvesting food crops.</p> <p><b>Revolving-credit schemes (PDM-DKE)</b> criticised for being prone to corruption and cronyism</p>
Philippines	<p>Least prepared in social protection in region.</p> <p><b>Comprehensive and Integrated Delivery of Social Services (CIDSS)</b>, launched in 1994, praised as effective. Facilitates consolidation and cooperation between government and civil society groups, delivering benefits using minimum basic needs indicators, community organising, a total family approach, a community-based monitoring network, capability building, and resource mobilisation.</p> <p>Focal programs include family and community welfare, women's welfare, child and youth welfare,</p>	<p>Response:</p> <ul style="list-style-type: none"> <li>• Food subsidies. National Food Authority (NFA) mandated to set a floor price for rice to protect farmers and a ceiling price to ensure consumer welfare, and maintain a buffer stock. In 1998, it imported rice and set up <b>Enhanced Retail Access for the Poor (ERAP)</b>, or sari-sari, stores to sell basic commodities (such as sugar, coffee, milk, cooking oil, sardines, and noodles) at below market prices. Studies show it was overwhelmingly the non-poor who benefited from these stores. NFA unable to prevent both high consumer and low producer prices</li> <li>• Public employment programs — <b>Food for Work</b> suffered from overlap of seasonal timing in agricultural harvesting, planting and cultivation, insufficient funds, and a bad law-and-order situation. <b>Rural roads</b> programs found to be gender insensitive</li> </ul> <p>Above not seen as very effective.</p> <p>and</p> <ul style="list-style-type: none"> <li>• Credit-based livelihood programs.</li> </ul>

	emergency assistance, self-employment assistance (SEA-K), food and nutrition, health, water and sanitation, income security, basic education, and literacy.	<p>Through CIDSS self-employment programs, members given small start-up capital with which they could set up ERAP stores. Nominal daily repayments were required, part saved in bank accounts.</p> <p>Efforts consistent with long history of microcredit in the Philippines (84 in operation when crisis hit).</p> <p>Collectively, the CIDSS and microcredit programs helped ameliorate poverty.</p> <p>Community involvement counted, as did coordination with state efforts through the CIDSS:</p> <p>‘initiatives that require less outlay, are open to diverse funding sources, and are well coordinated can be far more beneficial than expensive public works programs.’</p>
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## Decision-making and implementation

Crisis broke suddenly and unexpectedly. For most of the early months, both the IMF and governments were firefighting, taken aback at the scale and speed with which the macroeconomic malaise developed.

Crisis has not been countenanced — after all, SE and E Asia was a growth success with widely shared benefits, so little preparedness. Some early decision-making therefore followed the instincts of the IMF and governments, rather than a fresh analysis of just what was happening.

## Key lessons

Do not depend on the IMF. It was far too much in love with its own ideas to pay attention to the specifics of the crisis facing the different countries.

Think ahead: liberalisation of trade and capital accounts may be fine in principle, but it has its dangers — especially in capital markets, where herd instincts are strong and may take fright at a moment's notice.

So much what could be done effectively depended on prior organisation and experience that could be scaled up. Where safety nets were not in place, it was hard to set them up — Indonesia. Where countries knew about micro-finance, such as the Philippines, this was a channel to help small businesses in distress. In countries such as Thailand with all manner of NGOs and community organisations, these could be used to channel assistance to localised communities.

## Key sources

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Atinc, Tamar Manuelyan, and Michael Walton, 1998, *Social consequences of the East Asian financial crisis*. World Bank Group, 1998.

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## K. Literature summaries

Source	Keywords	Method	Summary notes
HIV/AIDS (1980-ongoing)			
<p>Gillespie, Stuart, ed. 2006. AIDS, poverty, and hunger: Challenges and responses. Highlights of the International Conference on HIV/AIDS and Food and Nutrition Security, Durban, South Africa, April 14–16, 2005. Washington, DC: International Food Policy Research Institute</p> <p>[Paragraphs indented in Sweden Sans are direct quotes]</p>	<p>HIV/AIDS</p> <p>Food and nutrition security</p>	<p>Synthesis of papers to conference</p>	<p>Impressive review that covers much ground in summarising ideas at the 2005 conference.</p> <p>Three questions:</p> <p style="padding-left: 40px;">In short: what is happening, how are people responding, and how can external support be best applied?</p> <p>Adopts a framework that has determinants of infection, factors and responses, converging on the individual, resulting in consequences that lead to impacts and responses.</p> <p>Useful wisdom about the nature of HIV/AIDS and responses:</p> <p style="padding-left: 40px;">Stillwaggon (this volume) asserts that global health policy is trammled by reliance on tools of epidemiology and health economics that are too rudimentary for understanding a complex epidemic. Public health problems of populations in poverty are interrelated, synergistic, and they are virtually ubiquitous in poor populations. Attempts to isolate the effects of vitamin A or malaria or worms on HIV transmission may be confounded by other endemic conditions, and treatment of any one condition may be constrained by the persistent impact of others.</p> <p style="padding-left: 40px;">Global AIDS policy is paralyzed because epidemiologic methods demand a “smoking gun” as evidence of relationships between HIV and the endemic conditions of malnutrition, parasites, and infectious disease. Such a burden of proof is inappropriate because interventions to reduce malnutrition, parasite load, and infectious diseases are beneficial in themselves (Stillwaggon, this volume).</p> <p>On community response:</p> <p>Communities have responded in innovative ways, including</p>



			<p>labour sharing, orphan support, community-based childcare, community food banks, credit schemes for funeral benefits, and new ways of reducing the time and energy of domestic tasks such as fuel and water collection and food preparation, to name but a few (see Gillespie and Kadiyala 2005).</p> <p>In the context of high HIV prevalences and associated stigma, community-driven approaches, with their advantages of local knowledge, may represent an untapped resource for addressing the HIV/AIDS–food insecurity nexus. Like the problem itself, community-led approaches are naturally more “multisectoral” and cross-cutting. Unlike vertical sectoral programs that tend to focus narrowly on infected individuals, they focus on affected communities.</p> <p>The issue of capacity to respond is critical, particularly as AIDS itself is eroding local capacity.</p> <p>Tony Barnett warns against defaulting to “installed capacity” — the fact that certain vertical program infrastructures are in place does not mean these are the most appropriate ones to employ.</p> <p>Binswanger, Gillespie, and Kadiyala (this volume) point to evidence from the field on the existence of latent community level capacity including unemployed or underemployed youth. Resources could be applied to developing appropriate community responses to AIDS, thus obviating constraints on personnel experienced in scaling up vertical programs.</p> <p>Investing in local institutions through support to decentralisation could go a long way in addressing remaining evidence gaps too, as communities have local knowledge, but they often lack power and resources. To support such new approaches, donors need to alter their time horizons, and they need to be more flexible.</p> <p>On decentralised approaches:</p>
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			<p>Binswanger, Gillespie, and Kadiyala (this volume) highlight lessons learned from “Integrated Rural Development,” a failed centralised and state-driven approach to rural development, and show why highly decentralised and community-driven approaches (as discussed above) with strong private sector involvement, hold great potential for avoiding difficulties in the coordination and execution of multisectoral programs.</p> <p>Problems of evidence base: it is thin:</p> <p>When it comes to interventions aimed at combating the HIV/AIDS–food insecurity nexus, the evidence base remains weak. Little is known about designing cost-effective solutions, scaling them up, situating them in the larger strategies for obtaining complex development objectives, or monitoring the full multidimensional nature of such interventions. “Best practices” are often announced that have never been properly evaluated or compared.</p> <p>Where organisations have launched interventions, they are usually isolated, small-scale, with minimal monitoring, and they are rarely well evaluated.</p> <p>Concluding:</p> <p>In many ways, HIV/AIDS is exposing the fragility of people’s livelihoods, a fragility that derives from multiple sources of vulnerability, many of which interact and are worsened by AIDS. Poverty, malnutrition, and hunger have been around a lot longer than the virus. We should thus not be blind to AIDS, but nor should we be blinded by it. An HIV lens, not a filter, needs to be employed. Any move toward “AIDS exceptionalism” will not improve understanding of these important interactions and may even close off some important opportunities for effectively responding.</p> <p>Three overlapping sets of problems therefore need to be kept in focus: HIV/ AIDS, food insecurity, and malnutrition. Not only do these problems overlap significantly, they interact too. We need to keep track of the nature, magnitude, and outcomes of these interactions so that responses are appropriate and effective in the context of high or rising HIV prevalences.</p> <p>...</p>
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			<p>Greater emphasis needs to be placed on learning from, supporting, and enabling community-driven responses and innovations. Communities have better, more relevant information (that responds to the diversity and context-specificity), and they often have latent, untapped capacity. Transparency and accountability may also be enhanced through local peer oversight. Communities have incentives to act, and they are responding, albeit not always optimally. But in general there is a need to start with an understanding of which community-driven responses are working before looking at ways to provide relevant support where local capacity is exceeded. This in turn requires a clear articulation of roles of other stakeholders, including the state, in a broad-based system of social protection.</p> <p>In the face of the challenges posed by the interactions among HIV/AIDS, food, and nutrition security, there is no convenient magic bullet intervention and no blueprint.</p> <p>The fact that “business as usual” is not working well, however, does not mean that everything needs to change.</p> <p>Rather, a truly multisectoral involvement is required, not the perfunctory addition of more (usually vertical) HIV activities on to sectoral plans. Mainstreaming starts with decision-makers internalizing AIDS as a development issue, leading in turn to a critical review of existing policies and programs through the lens of their growing knowledge of AIDS interactions. It is a process involving continual reflection, and the progressive application of principles and processes for responding rather than pulling predesigned interventions off the shelf.</p> <p>Need to balance between the need to know, and the need to act. Learning by doing indicated.</p>
<p>Binswanger, Hans P., Stuart Gillespie, and Suneetha Kadiyala, 2005, Scaling up Multisectoral Approaches to Combating HIV and AIDS, in Gillespie, Stuart, ed. 2006. AIDS, poverty, and hunger: Challenges and responses. Highlights of the International Conference on HIV/AIDS and Food and Nutrition Security, Durban,</p>	<p>HIV/AIDS Responses Multisectoral</p>	<p>Review of interventions</p>	<p>There is significant consensus on how to prevent, mitigate, and treat HIV and AIDS, well summarised in recent guidelines and best practice papers of UNAIDS, WHO, UNICEF, and other organisations. Nevertheless, scaling up of actions recommended in these documents has been slow.</p> <p>In this chapter we conclude that the slow speed cannot be explained by absence of the required knowledge or by the prohibitively high costs of scaling up; scientific consensus exists in many areas, and the world could well afford the funding needed. Instead,</p>

<p>South Africa, April 14–16, 2005. Washington, DC: International Food Policy Research Institute</p>			<p>explanations must be sought in the slow onset nature of the catastrophe, the enormous stigma surrounding HIV/AIDS, and the multiplicity and complexity of the actions required in the areas of prevention, care and treatment, and social protection.</p> <p>Regarding the latter, we show that implementation of parallel vertical intervention by different central sector agencies is not a practical way of scaling up. Integrated rural development is the classic example of the failure of such a strategy...</p> <p>The approach has been supplanted by local and community-driven development approaches in which implementation and coordination of many actions are delegated to communities and development committees associated with local governments, with the assistance of sector agencies and the private sector. Information at the local level is much more readily available, and therefore coordination at that level becomes feasible. The deep involvement of communities and existing local implementers sharply reduces cost, increases willingness to cofinance the interventions, and improves commitment and understanding of the programs. ...</p> <p>Early implementation experience, although not yet conclusive, shows that such implementation mechanisms can mobilise significant local capacities in communities and at local levels and can be scaled up at more affordable costs. Impact evaluation, however, lags behind. ...</p>
<p>Slater, Rachel, and Steve L. Wiggins. Responding to HIV/AIDS in agriculture and related activities. Natural Resources Perspectives 98, London: Overseas Development Institute, 2005</p>	<p>HIV/AIDS Agriculture</p>	<p>Review of literature on impacts of disease on agriculture and fam households</p>	<p>HIV/AIDS represents a severe threat, not just to those households affected, but to agriculture as a whole. Key impacts include loss of capital on the supply side, and loss of demand for output: together, these effects could mean all but the most favoured farming areas retreating into more extensive production to meet local subsistence needs. Multipliers from farming to other rural activity would be depressed, and the whole rural economy could thus be trapped in a low-level equilibrium, leaving the majority of households living in poverty and vulnerable to all manner of hazards.</p> <p>Much of what needs to be done to counter the effects of the HIV/AIDS epidemic on agricultural and related activities represents a redoubling of development efforts, including:</p> <p>Education and training needs stepping up to compensate for loss of labour and skills. This applies to the whole economy as well as to agriculture;</p>

			<p>With the expected loss of capital to the costs of the disease, the value of improved rural financial intermediation, in particular making the best possible use of savings, will be even greater. The considerable experience of institutional development and innovation for rural finance needs to be drawn on and applied more widely, taking into the account the need for adaptations to context;</p> <p>For households losing labour to HIV/AIDS, labour-saving technology will be particularly valuable. This may be in farming itself, but it may be more pressing and feasible to reduce time taken on other tasks, such as drawing water. This applies above all to activities usually carried out by females. Ideally, extension services need to be able to provide additional options for households affected;</p> <p>For some households, labour loss may be so severe that farming is no longer an option. Strengthening the rights of women and orphans to land worked by the household would allow them to retain a key asset, and derive income from renting out or share-cropping the land; and</p> <p>Little attention has been paid to the threat to supply chains from the disease. The epidemic thus underlines the importance of finding ways to improve their functioning, already often deficient, and make them less reliant on the personalised contacts of key players. Little attention has been paid to this so far in the thinking about the impact of the epidemic.</p> <p>HIV/AIDS creates an additional, heavy stress on rural societies, with the pressure falling highly unevenly across households. Many of these are already vulnerable to multiple hazards. The disease underlines the challenge of finding appropriate and effective social protection for affected households, when resources are limited.</p>
Slater, Rachel, 2008, Institutions and instruments for tackling chronic poverty: the case of special protection and HIV/AIDS, Working Paper 127, Chronic Poverty Research Centre, London: Overseas Development Institute	HIV/AIDS Social protection	Reviews social protection for people living with HIV/AIDS	<p>Box 4 summarises main findings (verbatim):</p> <p><b>Box 4: Policy conclusions and recommendations</b></p> <p>Singling out the HIV/AIDS epidemic as a special and unique kind of crisis can be useful in order to direct resources and political attention towards dealing with the impacts of the epidemic. However, actual activities focussing on HIV/AIDS mitigation and coping should be part of larger programmes (for example those dealing with chronic illness or food security).</p>

		<p>Except in very specific circumstances, <b>targeting of social protection mechanisms should be towards vulnerable people to reduce risks</b>, some of which are the result of HIV/AIDS and some of which have other sources, rather than targeting towards people affected by HIV/AIDS specifically/only.</p> <p><b>Support should be targeted to households</b> and not just individuals because of the problems that emerge when an AIDS patient dies and because, since it is generally orphans left behind, household recovery options are severely hampered.</p> <p>Direct targeting of HIV/AIDS orphans, as opposed to other orphans, raises equity and social justice problems and is, in many cases, inappropriate. HIV/AIDS orphans should be supported alongside other orphans who have similar needs, for example, alternative curriculum and training at school to help them take on adult roles and responsibilities.</p> <p>FFW and CFW programmes can be appropriate for HIV-positive but asymptomatic people, but these should be in parallel to other transfers, notably food and cash, for households that are labour constrained through morbidity or mortality effects. Running FFW and CFW programmes in parallel with food and cash transfers is important in preventing children, especially orphans, from being forced into labour markets.</p> <p>Innovations in micro-finance to support HIV/AIDS-affected and other vulnerable households should be encouraged, accompanied by a careful consideration of the embedded inequalities in communities that may result in exclusion of HIV/AIDS-affected households.</p> <p>Various institutions have a role to play in contributing to or implementing safety nets. Outside HIV/AIDS-affected households and communities, other stakeholders, notably NGOs, governments and donors, should scale up community safety nets without generating a 'crowding out' effect. Partnerships between NGOs, governments and donors are crucial in this respect.</p> <p>Better coordination is required between NGOs, governments and donors and could be provided through a national AIDS authority with a multisectoral mandate. However, actual</p>
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			<p>programmes and projects should be mainstreamed into sectoral activities, in part to prevent HIV/AIDS exceptionalism.</p> <p>Social protection interventions should be designed around impact rather than prevalence rates, and donors, governments and NGOs should ensure an appropriate balance between prevention, care and recovery activities, whatever the prevalence. Donors and governments should acknowledge the policy choices that are made between fixed-life projects that promote people's livelihoods through economic growth, and recurrent expenditure on social protection for households that cannot contribute to, and are unlikely to benefit from, economic growth. They should recognise that the HIV/AIDS epidemic will create a long-term welfare bill and find ways of supporting this.</p>
Nolan, Ann. "Social Protection in the Context of HIV and AIDS' in OCED, 2009, Promoting Pro-Poor Growth: Social Protection, Paris: OECD	HIV/AIDS Social protection	Reviews social protection for people living with HIV/AIDS	<p>HIV/AIDS takes a heavy toll on livelihoods and economies.</p> <p>Cash transfers help preserve consumption and prevent people from having to resort to sales of assets or to work that endangers them. Targeting should be broad, aimed at poverty in general, rather than trying to isolate those living with HIV/AIDS — since that can confer stigma.</p> <p>Take care that funding cash transfers does not deprive health and education of funding.</p> <p>Opportunities exist for action to promote the right so women and girls to education., land., and fair treatment.</p>
Buse, Kent, Clare Dickinson, and Michel Sidibé. HIV: know your epidemic, act on its politics. Journal of the Royal Society of Medicine 101, no. 12 (2008): 572.	HIV/AIDS Political economy	Review of the politics of responses to HIV/AIDS Short essay	<p>Argues that the political determinants of responses to HIV/AIDS matter as much, if not more, than medical considerations.</p> <p>The literature reveals the tremendous impact of ideas on HIV policy. The social construction of who is thought to be at risk plays into the perceived political acceptability of action on HIV.<sup>8</sup></p>
Piot, P., Russell, S., & Larson, H. (2007). Good politics, bad politics: the experience of AIDS. American Journal of Public	HIV/AIDS Political economy	Editorial	<p>Records how HIV/AIDS has been treated politically, as a disease that was for many scorned as a disease of homosexuals, drug users and the sexually promiscuous.</p> <p>Grassroots political mobilisation helped make a difference.</p>



Health, 97 (11), 1934–1936. <a href="https://doi.org/10.2105/AJPH.2007.121418">https://doi.org/10.2105/AJPH.2007.121418</a>			<p>Setting the pandemic as a human rights issues, making people aware how much those who are vulnerable on account of low incomes are the hardest hit, these made a difference. As did building a set of international conference and forums that encouraged leaders to sign up to fight the disease and aid those living with the virus.</p> <p>Effect on public health has been transformational:</p> <p>Action on AIDS has been truly transformational for public health. AIDS has also introduced a new paradigm for the involvement of affected individuals and communities and changed the dynamics between caregivers, the pharmaceutical industry, public health establishment and international organisations, and affected communities. Arguably the most extreme public health issue of our time, AIDS has underscored the imperatives to think and act beyond the confines of the classic public health arena, adopt comprehensive approaches, and engage leadership at all levels.<sup>11</sup></p> <p>Two big take-aways: work with communities, work with leaders.</p>
<b>Asian currency crisis 1997–98</b>			
Bhushan, Aniket & Chantal Blouin, 2009, Liberalization “Shocks” and Social Protection Policies Lessons from the East Asian Financial Crisis, in Ronald Labonté, Ted Schrecker, Corinne Packer, and Vivien Runnels (Eds), Globalization and Health. Pathways, Evidence and Policy, London & New York: Routledge	<p>Financial crisis</p> <p>SE Asia</p> <p>E Asia</p> <p>Social protection</p> <p>Safety nets</p>	Review of primary literature	<p>The Asian currency crisis that broke in 1997 delivered a sharp shock to many economies of Southeast and East Asia, most notably those of Thailand, Malaysia, Indonesia, Philippines and Korea. IMF role in enforcing austerity exacerbated the impacts of the crisis.</p> <p>Businesses went bankrupt, unemployment rose, real wages fell, and household incomes declined. Many had to economise on food and seek cheaper health care.</p> <p>It made clear that the vulnerable included many people who had previously not been seen as poor.</p> <p>Responses were diverse, but included:</p> <ul style="list-style-type: none"> <li>• In MICs introducing social protection for workers that was universal;</li> <li>• Providing support for small and informal businesses in credits and grants</li> <li>• Grants and credits to community organisation to ameliorate local conditions</li> <li>• Attempts to control prices or to provide staple foods and other necessities at subsidised prices; and</li> <li>• Safety nets such as public works.</li> </ul>

			<p>So much what could be done effectively depended on prior organisation, experience that could be scaled up.</p> <p>One outcome was increased suspicion of external agencies, the IMF in particular, and the sense that if the region — especially ASEAN — was to avoid recurrences, it had to take care of itself.</p> <p>Recovery for most of the region was rather rapid, except for Indonesia.</p>
<p>Jones, Nicola, &amp; Hannah Marsden, 2010, Assessing the Impacts of and Response to the 1997-98 Asian Financial Crisis through a Child Rights Lens, UNICEF Social and Economic Policy Working Paper, New York: UNICEF</p>	<p>Asian financial crisis</p> <p>Public spending</p> <p>Child rights</p> <p>Social protection</p>	<p>Review of primary literature, data bases</p>	<p>Crisis of 1997 resulted in unemployment, else employment, lower wages, higher prices and hardship for most people.</p> <p>Children may have survived — rates of life expectancy, infant mortality, stunting and so on seem to have held up; but have suffered from reduced spending and consumption.</p> <p>Policy responses ranged from economic adjustment, to social services to social protection.</p> <p>Lessons around economic crisis impacts and policy responses to cushion children and caregivers:</p> <ol style="list-style-type: none"> <li>1) understanding the underlying political economy drivers of policy choices so as to design more strategic policy advocacy strategies;</li> <li>2) designing gender- and age-responsive social protection mechanisms;</li> <li>3) balancing investments in targeted social protection measures with protecting investments in basic service provision;</li> <li>4) harnessing potential synergies between informal and formal social protection mechanisms;</li> <li>5) ensuring that social protection responses are not limited to addressing economic and related consumption vulnerabilities but also adequately address social vulnerabilities, especially those related to gender-based violence and child protection from violence and abuse; and</li> <li>6) investing in more systematic age- and gender-disaggregated data collection and crisis monitoring initiatives so as to better inform policy debates on how best to respond to vulnerable populations, especially children, youth and caregivers.</li> </ol>

Atinc, Tamar Manuelyan, and Michael Walton, 1998, Social consequences of the East Asian financial crisis. World Bank Group, 1998.	Financial crisis Social protection		
Weisbrot, Mark. Ten years after: the lasting impact of the Asian financial crisis. Center for Economic and Policy Research (2007): 2.	Financial crisis Macroeconomic management	Review of policy responses of IMF	<p>The crisis was one of short-term liquidity. The affected countries had taken on much private short-term debt. When currencies depreciated, paying this off led to a run on currency reserves, then to external investor overreacting so that large inflows of private finance became outflows.</p> <p>Author then explains how counter-productive was the IMF response, that omitted to act as lender of last resort, but instead committed the errors of insisting on recessionary policy. It was these measures that led to far greater economic malaise and social hardship than was merited.</p> <p>Indeed, it had been the IMF;s insistence on freeing capital markets that had laid the ground for the liquidity shock in the first place.</p> <p>These failures were highly visible, leading to the IMF losing its role as arbiter in MICs, as the countries themselves built large reserves to deal with any subsequent problems, in which regional cooperation was seen as the way to avoid a repeat, rather than any reliance on the IMF.</p> <p>The problem was caused by a sudden reversal of private international capital flows to the region: from a net inflow of \$92.8 billion in 1996 to a net outflow of \$12.1 billion in 1997.</p> <p>In the crucial first few months of the crisis (August to December 1997), the IMF concentrated on structural "reforms," and put forth the argument that the crisis was due to "fundamental structural weaknesses"<sup>13</sup> in these economies, rather than the much more easily resolvable liquidity problem that actually caused the crisis.</p>

## 2007/08 food price spike

<p>Headey, Derek &amp; Shenggen Fan, 2010, Reflections on the global food crisis. How did it happen? How has it hurt? and How can we prevent the next one? IFPRI research monograph 165. Washington DC: International Food Policy Research Institute</p>	<p>Cereals prices</p>	<p>Review of causes of the price spike</p>	<p>The food price spike caused concern since poor people spend much of their small incomes on food: higher food prices mean hardship.</p> <p>Given that prices may be higher than before, and spikes can happen, thus:</p> <p>Indeed, without actions to repair some significant flaws in the global food system, the food crises of 1972–74 and 2008 could be repeated, perhaps sooner rather than later.</p> <p>Causes</p> <p>Multiple causes:</p> <p>Indeed, the more one assesses this crisis, the more one concludes that it is the result of a complex set of interacting factors rather than any single factor.</p> <p>Some explanations hold up better than others, including:</p> <p>A complex of macro factors that pushed up maize prices with some knock-on to other cereals —</p> <p>This set of interconnected factors includes rising energy prices, the depreciation of the US dollar, low-interest rates, and investment portfolio adjustments in favour of commodities.</p> <p>This saw energy prices push up costs of production, allow oil exporters to import more cereals, and led to a great rise in demand for biofuel feedstock — the latter being of about the same order as the export surge of 1973 in wheat to the USSR.</p> <p>A rice price bubble that resulted from panic buying when exports were banned; and,</p> <p>Reduced wheat supply from harvest failures and export restrictions, although mainly the former.</p> <p>Other explanations are popular, but less convincing.</p> <p>Demand from China and India — but they are self-sufficient in cereals. China's imports of soy took off from 1995, not more recently, and most of this comes from new lands in Argentina and Brasil. Yes, they reduced their stocks, but from high levels: it is not clear this affected expectations — although lower stocks in India may have influenced the late 2007 ban on rice exports. Oil prices are affected more by other countries' demand than these two. On rising cereals imports, other areas increased theirs more than the Asian giants:</p>
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			<p>... we find that growth in cereal imports was much stronger among other sets of countries, including Mexico, the European Union (EU), and a range of Middle Eastern and North African (MENA) countries.</p> <p>Declining growth of production and yields, land degradation. Most of the slow down comes from old Eastern Bloc:</p> <p>It turns out that production per capita has indeed declined, but about three-quarters of that decline is explained by falling production in the former USSR and Eastern Europe. However, that trend did not affect international trade, because the former Soviet bloc countries actually increased cereal exports to the rest of the world over this period.</p> <p>Africa is problematical, but barely affects the world price.</p> <p>Stock declines are also less convincing, since:</p> <p>First, global stock declines are much less impressive once policy-driven reductions of the excessive stocks in China and the former USSR are excluded. Second, because stocks are a residual, stock declines in other countries primarily reflect deeper causes, such as rising demand or insufficient supply. Indeed, in the case of wheat markets we find that trade shocks reduced US wheat stocks, so that low stocks can hardly be a cause of the crisis. Similar results are true of biofuels demand and US maize stocks. Hence we do not believe low stocks were an important cause of the crisis.</p> <p>Speculation, on which this report is agnostic:</p> <p>Our view is ultimately agnostic, because we believe it is impossible to discern causality in the context of futures markets, even from time series econometrics, as futures market variables represent expectations of the future. Thus the usual Granger-causality tests are potentially irrelevant, because expectations of price rises at time <math>t</math> might be noncausally associated with higher prices at time <math>t + 1</math>. However, whether or not futures market activities were a cause of the crisis, we find it unlikely that they were a driving force, if only because we have substantial confidence in several of the more tangible explanations of the crisis discussed above: oil prices, biofuels demand, a depreciating US dollar, and various trade shocks, in particular.</p> <p>Consequences</p>
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			<p>The macro studies tend to limit examination to changed trade balances, fiscal deficits — without looking at household impacts. Micro-studies often make strong assumptions about price transmission, as well as other assumptions about household response. Direct observations of impacts are obscured by the simultaneous rise in oil prices. While poor households depend directly more on food than fuel, the import bills for LDCs in oil are 2.5 times larger than for food imports, so it is likely that the oil price shock had significant effects.</p> <p>Despite these qualifiers, our review of local price trends in developing countries does show that real prices in 2008 were substantially higher than prices in 2007, often double, especially around the middle of 2008. The good news is that prices generally did start to decline in late 2008 as international prices fell. Had higher prices persisted, the crisis could have turned especially severe.</p> <p>The bad news is that price rises were surprisingly high in a large number of countries. In Africa, prices rose especially high, particularly for imported products principally consumed by urban populations, but also for some local commodities that are not widely traded (indeed, commodities for which international prices are not even reported). In this monograph we can only speculate on why African prices rose so substantially, and ultimately the answer remains a matter for future research.</p> <p>Concluding comments</p> <p>There are striking similarities between 2007/08 and 1973/74: oil prices, supply shocks, etc. In many ways the two crises had similar causes, including rising energy prices, similarly sized shocks to US cereal demand (from the Soviet bloc in the 1970s and from the biofuels industry today), low interest rates, and the devaluation of the dollar, as well as declining stocks and some adverse weather shocks.</p> <p>There may well be future shocks, from climate change and more variable weather, oil prices, surging biofuel demand.</p> <p>The most daunting aspect of the existing global food system is not only the strong possibility that food crises are an inherent aspect of the global food system—which is pervaded by various distortions of production, trade, and agricultural investment and</p>
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			<p>suffers from a huge regional imbalance in cereal production—but also that this system may well be hit hard by several shocks in the future.</p> <p>But our main concern is apathy: that once prices fall, interest in sustained agricultural development will fall away:</p> <p>The real concern is that the precipitous fall in food prices over the second half of 2008 will once again lead to the widespread apathy toward the agricultural sector that has prevailed among policymakers in both developed and developing countries. Indeed, a long history of neglecting agricultural investments has made it difficult for many developing countries and their donors to quickly scale up agricultural investments in the wake of the crisis. Despite these obstacles, sustained and smart investments in developing country agriculture will be essential if the world food system is to finally deliver what it ought to: greater food security and real income gains for the world's poorest people.</p>
Wiggins, Steve & Sharada Keats, 2013, Looking back, peering forward. Food prices & the food price spike of 2007/08, Project Report, ODI Shockwatch: Managing Risk and Building Resilience in an Uncertain World, Overseas Development Institute	Cereals prices	Review of evidence available by 2013	<p>Examines causes, responses and impacts of food price spike.</p> <p>On causes, argues that the spike is best considered the consequence of an unusual configuration of events, rather than heralding some fundamental change in the workings of the cereals system:</p> <p>The argument here distinguishes the conditions that made possible the spike — mainly a slowdown in the growth of cereals production, stocks depleted to a level at which short-term shocks could not be accommodated, rising oil prices and the associated extraordinary increase in the demand for US maize to be distilled to ethanol; from short term triggers of harvest failures and biofuel mandates that accelerated price increases; and from the very short term, overreactions of governments, traders and consumers whose restocking, export limitations and hoarding aggravated the initial price increases to produce an extraordinary spike.</p> <p>On responses:</p> <p>Most governments tried hard to react to higher world food prices. Low-income countries (LIC), however, despite the additional aid many received, struggled to make a difference. They had few means by which to mitigate price rises, either at the border, or on domestic markets. Most of the buffering of international price rises came through the natural protection of high transport costs to ports. Not that this was necessarily an advantage for</p>



		<p>those LICs distant from the sea: protection left them highly vulnerable to price volatility from domestic harvests.</p> <p>When it came to protecting vulnerable citizens, again LICs often faced the twin challenges of not having safety nets in place (in terms of both policies and institutions) that could be scaled up when prices rose, combined with not enough resources to provide adequate protection in countries where half or more of the population were in danger of impoverishment and hunger.</p> <p>Most tried to stimulate domestic production, yet again LICs had few means by which to do so: distribution of seed and fertiliser were costly exercises, promising farmers higher prices was unthinkable for lack of funds.</p> <p>Middle-income countries, on the other hand, often had more scope for action, thanks to their greater administrative capacity, deeper funds to draw on, and often a smaller share of population to protect. With agriculture a smaller share of the economy, offering farmers higher prices or subsidised inputs was feasible. Having the means and acting effectively or efficiently, however, are not necessarily linked.</p> <p>...</p> <p>Across countries, higher food prices were commonly seen as a threat to the lives of poor urban households with less appreciation that poor rural households might be equally vulnerable. In any case, for many countries it was administratively easier to protect urban rather than rural households. Urban households, moreover, were better placed to protest in the face of price increases. Hence responses tended to show a bias to urban areas.</p> <p>Overall, most surveys report that not many vulnerable households received assistance from the state during the food price spike. Despite considerable public efforts, for most threatened households, it was their own ability to cope that mattered.</p> <p>On impacts, inevitably higher food prices implied hardship for vulnerable households, especially in the short run, when the ability to cope is least. Effects over the longer run may have less damaging, and indeed, the depth of hardship in some cases may have been less than feared:</p> <p>Any rise in prices of essential items such as staple foods will entail some hardship. The more important question is whether the price spike resulted in some hardship for vulnerable</p>
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			<p>households, or whether it has led to permanent damage. If this latter were the case, then it should show up in the nutrition of infants: they are usually the most vulnerable members of vulnerable households. Yet the statistics from national surveys conducted before and after the spike do not show a general trend towards damage: on the contrary, in 37 out of 52 countries, child nutrition improved rather than worsening.</p> <p>The simple interpretation may be that for vulnerable households, the food price spike was not that much of a problem provided that the household lived in a fast-growing economy with a reasonably competent government capable of providing the public goods and services to ensure that growth provides wide benefits and able to protect the vulnerable. Those vulnerable households living in countries with slow growing economies, with governments barely able to fulfil their functions and unable to react effectively to the spike, may well have suffered.</p> <p>Report then assess the prospects for cereals prices over the medium term, concludes that they will be more stable with levels falling back to those seen prior to spike in real terms.</p>
Keats, Sharada, Steve Wiggins, & Edward Clay, 2011, International rapid responses to the global food crisis of 2007/08. Three years on: How relevant, effective, and efficient were international responses to food price rises across the world in 2007/08?, Project Report, Overseas Development Institute	Policy response	Synthesis of reviews and evaluations available 2011	<p>Aid partners and multilateral agencies mounted a major response to the food price spike, with more than US\$5 billion — were approved in 2008 and 2009 by the agencies concerned. Responses fell into 3 categories:</p> <p>Collecting and disseminating information internationally, to assess the crisis and its implications, to mobilise and coordinate responses;</p> <p>Technical advice to national governments on how to respond, particularly on identifying the vulnerable;</p> <p>Funds and in-kind donations to</p> <p>Stimulate agricultural production — mainly through seed and fertiliser distribution;</p> <p>Provide food aid, health and nutrition programmes — with assistance from UNICEF, WFP and WHO; and,</p> <p>Expand (support or in some cases implement) other safety nets.</p> <p>Review focuses on third set of responses.</p> <p>Responses to higher world food prices were conditioned by how different agencies perceived the crisis. Humanitarian organisations, for example, tended to see the crisis as</p>

			<p>exacerbating costs of food aid, undermining cash transfers, and adding extra demand for safety nets. They responded by securing more funding and expanding safety nets. Development agencies saw higher prices emerging from low production and stocks. So they responded by promoting an agricultural production, and in some cases taking steps to increase (often humanitarian) cereal reserves. Other agencies saw the crisis eating into the budgets of low-income countries attempting to stimulate national production or cushion their vulnerable populations from price rises, so they provided funds to pay for these, and in some cases to compensate for budget losses arising from reduced import taxes, higher fuel bills and the like. For governments struggling for lack of administrative capacity, they helped with technical and financial support.</p> <p>Were these efforts directed to the right place and people? By location, the agencies seem to have chosen the right countries to focus their efforts. It is not clear, however, if the neediest locations within countries were reached, as it is difficult to find information on the extent to which spatial mapping of sub-national vulnerability influenced decisions. Rural areas got less attention than urban in many cases. In this respect, targeting was misinformed. The typical expectation was that urban households would be harder hit than rural ones since it was assumed that the latter would not have to buy in food. In fact, many of the rural poor — who were often poorer than their urban counterparts — relied heavily on buying in food and so were hit hard.</p> <p>Socially, not enough is known about whether or not the right people within selected locations were reached. In some cases, reaching the neediest was too difficult at short notice.</p> <p>Were the responses the right ones?</p> <p>Most responses fell into two categories: stimulating production and protecting vulnerable people from high food prices. Broadly, these responses were appropriate, but perhaps not always entirely accurate. In addition to the questionable assumption that problems were more severe in urban areas, it was also often thought that the prime cause for concern was adding to the numbers in poverty, rather than the increased poverty of the already poor. Much of the urgency of the international response was stimulated by the estimate of an extra 100 million or so being added to the numbers of the hungry; rather than the worsening fate of the 850 million who were already hungry, ill-placed to cope with extra</p>
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			<p>strain on their access to food. An earlier review found that not all of the predicted impacts of higher food prices were entirely as expected</p> <p>How effective were these responses? Responses were delayed. Inputs were delivered but many arrived after the first half of 2008, when crops were planted in the Northern Hemisphere. Globally, most production response came from developed regions, rather than in developing countries. Some of these, however, did see strong response – particularly in West Africa and in South, South-East and East Asia. Some individual programmes report positive impacts on people’s food security.</p> <p>Safety nets were similarly delayed: most got going by late 2008 and early 2009, when prices had been high for some months. Less is known about their effectiveness. Some reportedly suffered from implementers’ capacity constraints, overly complex targeting, and insufficient attention to women. There were also not enough attempts to examine relative effectiveness of implementing one type of safety net compared to another. In many cases, school feeding programmes were the focus because, unlike more sophisticated social protection programmes, they already existed in many low-income countries and could be scaled up relatively quickly.</p> <p>A final reflection concerns the evaluation deficit. While it may still be early to ask questions about impacts of these responses, not all agencies made sufficient attempts to evaluate their response. Most reporting stops at outputs without consideration of impacts or outcomes. Very few evaluations of what was done are available; exceptions being for FAO’s TCP responses, and for some WFP and DG-ECHO programmes in place at the time of the food crisis. And while these studies did the best they could given limited time and data, they still leave some questions unanswered.</p>
Avian flu			•
Liang et al, (2011) Comparative Analysis of National Pandemic Influenza Preparedness Plans, WHO	Avian Flu Preparedness	Desk review	<p>Analysis according to 5 ‘functional components’ of pandemic preparedness and response guidance:</p> <p>Planning and coordination,</p> <p>situation monitoring and assessment,</p> <p>prevention and containment,</p>

			<p>health system response</p> <p>communication</p> <p>More to be done on sub-national planning</p> <p>Most countries had plans</p> <p>Plans from richer countries were better/more complete, but national income was not the only determinant of planning quality</p> <p>Plans coming from countries with higher life expectancies and lower under-five mortality rates tended to have higher pandemic preparedness plan completeness values</p>
Ortu et al (2008), Pandemic Flu Preparedness in Africa	Avian Flu Preparedness Africa	Desk review	<p>Thirty-five plans were identified and available from 53 African countries. Most plans are relatively robust in addressing detection and containment of influenza in animals but strategic preparedness is weak.</p> <p>communication strategies generally developed to raise awareness and promote hygiene measures.</p> <p>Human health care sector is ill prepared.</p> <p>The maintenance of essential services in the event of a pandemic is absent from most plans.</p> <p>Most plans are 'developmental' but lack operational clarity.</p>
Sambala et al (2018), Pandemic influenza preparedness in the WHO African region	Avian Flu Preparedness Africa	Desk review	<p>Assessed flu pandemic plans against seven thematic areas of preparedness:</p> <p>preparation</p> <p>coordination and partnership</p> <p>risk communication</p> <p>surveillance and monitoring</p> <p>prevention and containment</p> <p>case investigation and treatment</p> <p>ethical consideration</p> <p>scores ranged from 5% (CDI) to 79% (RSA)</p>

			<p>on average, highest scores for preparation, coordination and partnership and risk communication (but only 48/49%)</p> <p>lowest scores for case investigation and treatment and ethics (25% and 14% resp.)</p> <p>very few plans scored on:</p> <p>business continuity plans across the non-health sectors</p> <p>sub-national planning</p> <p>operational details (eg no of cases expected, # staff likely to be off sick)</p> <p>Cooperation with neighbouring countries</p> <p>Web reporting systems</p> <p>Plans for recruiting volunteers from local communities</p> <p>"Overall, our assessment shows that pandemic preparedness plans across the WHO African region are inadequate"</p> <p>In other words, "it is OK, we have a plan in place" should not be enough to reassure us.</p>
Breiman et al (2007), Preparedness for Highly Pathogenic Avian Influenza Pandemic in Africa	Preparedness for Highly Pathogenic Avian Influenza Pandemic in Africa	Desk review	<p>Despite national and state level strategies, local resources were limited and the virus spread widely.</p> <p>&gt;\$3 million from donors, \$50 million credit from WB plus \$ms from GoN – but could not get human, material, and financial resources rapidly to locally affected areas.</p> <p>the greatest adverse effect was in impoverished areas like rural and semi-urban Nigeria, affecting especially backyard and medium-scale farmers. Egg and chicken sales declined by &gt;80% within 2 weeks after the announcement of the outbreak; 4 months later, sales were still &lt;50% of baseline. Poultry feed sales also dropped by &gt;80%; 80% of workers on affected farms and 45% on unaffected farms lost their jobs. The out- break caused an immediate decline in chicken consumption, even in areas where the disease was not reported.</p> <p>Sub-Saharan Africa is uniquely characterised by vast geographic areas that are difficult to access; uneven socio- economic development; nearly transcontinental limitations in epidemiologic, surveillance, and laboratory capacity; and profound infrastructure weaknesses relating to communications and health systems and capacity of government organisations to effectively focus limited resources. [2007 assessment – and 2020?]</p>

			<p>Risk: attention to avian flu diverting resources and focus from other health issues. “for many months, ministries of health personnel in countries throughout Africa have been deeply immersed in pandemic preparedness and response planning; they have been pulled away from routine activities, and critical programs have been put on hold.”</p> <p>Need to use avian flu resources in ways that are “in a way that is broadly applicable to building public health capacity in recipient nations”</p>
Leach and Scoones (2013), The Social and Political Lives of Zoonotic Disease Models: Narratives, science, and policy	<p>Zoonotic Disease Modelling</p> <p>Narratives</p> <p>Science &amp; politics</p>	Analysis of previous pandemic	<p>Pandemic models are not neutral science, but are based on social, cultural, political norms and values that shape their development</p> <p>Addressing epidemics means understanding these social, political, cultural narratives</p> <p>For H5N1, mathematical modelling emphasised ‘control at source’ measures, when this means taking very difficult policy decisions (with potentially worse impacts than the disease itself) when the threat is only modest. Frequently, it often means making difficult decisions around trade-offs between economic damage and lives lost and before there is sufficient information for this.</p> <p>Models that took social dynamics into account (e.g. disaggregating by gender) saw disease spread less rapidly, with fewer cases of mortality and morbidity</p> <p>Participatory epidemic models could shed light on how exposure is highly differentiated by age, gender, occupation, and behaviour changes based on risk profile.</p> <p>Each modelling approach on its own is likely to misunderstand the pan/epidemic. Modelling must include political, social, cultural dimensions if they are to truly understand the nature of the disease and the epi/pandemic that it will cause and to ensure that responses are appropriate</p>
Scoones and Forster (2008) The International Response to Highly Pathogenic Influenza	<p>Avian flu</p> <p>Pandemic response</p>	Analysis of previous pandemic	<p>International response was dominated by outbreak narrative; including construction of the ‘other’ – dangerous places and people from where disease comes and (often) reflecting Western anxieties about globalisation</p> <p>Number of different responses, including the veterinary response and human flu outbreak approach: led to conflict over resources</p> <p>Veterinarians and socio-economists also at loggerheads: livelihoods vs disease control (i.e. culling of livestock)</p>



			<p>Security responses emphasise the protection of healthy rich northern populations: keeping the virus out of the global north. A meaningful response needs to be global, however, as disease can originate anywhere.</p> <p>Nevertheless, the US rates pandemic flu as a higher risk to national security than terrorist attacks and assumes it to be largely an external / foreign threat – protecting “us” from “them”. These discourses are central to WHO response too, which has taken a health security approach.</p> <p>Epidemiological responses are “reinforced by a set of disciplinary cultures which value quantitative, disease-focused assessments over more complex analyses of social, economic, political and ecological dynamics”</p> <p>The ‘outbreak’ narrative and response may be appropriate and necessary in some circumstances, however, where diseases are entrenched and/or endemic (e.g. Ebola in parts of Africa), different approaches are needed: long-term prevention, managing endemism. Emphasising eradication pathway may be impossible.</p> <p>“Choices of what to do, where and for whom (...), inevitably frame and direct pathways of response. If dominated, as to date, with largely northern concerns about ‘health security’, then a response pathway will emerge in a particular way”</p>
Bazeley and Macleod (2006), Highly Pathogenic Avian Influenza in Birds – Assessment of Issues and Options for Central Research Department	Avian flu Response options DFID	Review of previous experiences Advice for DFID preparedness	<p>Veterinary argument for intervention: particularly infectious, difficult to control, mortality levels of up to 100% in some avian poultry outbreaks. Draconian measures are typically applied, due to economic cost to poultry farmers.</p> <p>Fears that mutation could result in a virus that spreads from humans-to-humans, causing between 2 and 7.4 (or more) million deaths and economic damage of US\$ 1,430 billion. Given that this virus has not yet developed, a vaccine cannot be either, and it is unclear how effective existing ARVs would be.</p> <p>“... the importance of HPAI prevention and control in poultry in developing countries has less to do with averting pandemic flu in those particular countries and more to do with the global public good of reducing worldwide bio-threat”</p> <p>Ability to control avian flu is severely limited by veterinary extension services, which were decimated by SAPs in Africa. As a result, there is very little surveillance or diagnostic capacity in many countries. Likewise, without adequate resources for compensation,</p>

			<p>farmers are unlikely to report early signs of disease (while overcompensation encourages intentional spread of disease as has happened in Nigeria).</p> <p>Poverty dimension: geographic overlap between areas of high poverty density and high poultry density and outbreaks are more likely in poor areas, making transmission to humans more likely too.</p> <p>State capacity is most important ingredient to preventing biohazards such as avian flu and where DFID should be spending its money [on preparedness, essentially]. This includes strengthening extension to/regulation of poultry sector.</p> <p>Questions for DFID: does it want to address emergency responsiveness or longer-term development? Is this a human health or veterinary issue? Is it about efficiency and effectiveness of international institutions? Or long-term state capacity-building?</p> <p>There is sufficient research in virology, epidemiology, vaccinology (with possible exception of on-site diagnostics), but considerable space for DFID to add value to process of adaptation and adoption of scientific insights.</p> <p>DFID can add value in social, economic, and vulnerability consequences of epidemics and any control strategies employed – and area that is undoubtedly under-resourced. Also: invest in deepening public engagement.</p> <p>Invest in institutional architecture of global aid to ensure these issues are adequately dealt with, for example, by FAO</p>
Roland-Horst, Epprecht & Otte (2008), Adjustment of Smallholder Livestock Producers to External shocks: The case of HPAI in Vietnam	Shock Livestock producers Avian flu	Analysis of economic impact of avian flu for poultry producers	<p>Due to their vulnerability, smallholders have developed strategies for (ex ante) risk management and (ex post) coping</p> <p>Need to build on these, when trying to assist smallholders, rather than trying to re-establish initial conditions</p> <p>Living standards - according to farmers themselves – depend on returns to livestock production and crop productivity</p> <p>Significant scope among poultry farmers to offset losses by expanding other forms of production - though varies greatly between households</p> <p>"Assuming that prices remain constant, the results obtained indicate that most farmers could cope with a one-time poultry stock loss by increasing other agricultural</p>

			production/marketing activities by 5 percent or less, although a significant minority would need increases in the 5 to 10 percent range"
Epprecht, Vinh, Otte (2007), Controlling Avian Flu and Protecting People's Livelihoods in the Mekong Region and Poverty in Vietnam	Avian flu control Vietnam Poverty	Analysis of economic impact of avian flu for poultry producers	Nearly all poor rural households in remoter, mountainous Vietnam depend on poultry Majority of poor producers, however, are concentrated in lowlands, where market transactions, movements of goods, livestock and people are most frequent Northern areas: livestock contribute 25% to household income; southern: 10% Poultry accounts for about a quarter of livestock income; average flock size: 16 Main HPAI risk areas coincide with irrigated rice areas in the lowlands, with good market access and high poultry transactions Need to be aware of these factors in order to implement good policies for dealing with HPAI
Rushton et al (2005), Impact of Avian influenza outbreaks in the poultry sectors of five South Asian countries	Poultry sector Avian flu South Asia	Impact analysis	Thailand: 1.5% reduction in GDP due to HPAI; Vietnam: 0.3-1.8% of GDP; Thailand: agricultural growth halved in year of outbreak (FAO estimates) Poultry production not significant enough to have really noticeable macroeconomic impacts; however, decrease in tourism sector in Thailand meant the impact was more significant. Microeconomic impact: depends when in the poultry cycle a producer loses her stock Adoption of control strategies is informed by perceived risk politically, socially, economically. Must consider public health, economics, sustainability of livelihoods, adverse publicity (for example for tourism industry). Problems with surveillance: focus only on one disease, so does not address main concern of farmers; need to monitor bird and product movement too; surveillance of small-scale production is resource intensive. Must incorporate participatory methods! Need to regulate cross-border poultry trade, without pushing traders into black market; need to consider responses/compensation schemes and to communicate these in advance to encourage early reporting. Vaccination not always a good strategy: can hide the disease and increase likelihood of transmission to humans.

			<p>As always: need to avoid asking small-scale producers/affected individuals to bear the costs of epidemiological control.</p> <p>Need for value-chain analysis to identify key areas for control of disease and its spread.</p>
Ear (2009), Cambodia's Victim Zero: Global and National Responses to Highly Pathogenic Avian Influenza, STEPS	Cambodia Avian flu Politics	Political analysis of pandemic response	<p>Cambodia offers prime example of impact of foreign aid on a weak state and where drive for tourism and public health can be at odds.</p> <p>"Already awash in donor money, Cambodia played its role on a global policy stage in both clamouring for its share of the Avian Flu pie and becoming an incubator for donor trial-and-error experiments on how to achieve above all else one goal: minimising the risk of Avian Influenza's spread inside Cambodia and, more importantly, to reduce pandemic potential that could strike donor countries themselves."</p> <p>Cambodia reveals key challenges, obstacles, and opportunities for responding to /avian flu: limited knowledge on effectiveness of policy options; lack of technical and financial management capacity in key ministries (in this case agriculture); avian flu control strategies must be pro-poor if they are to succeed.</p> <p>Same old story with aid: driven by interests other than recipients' (in this case, fear of disease in donor countries), results in poor policy advice and myopic programming.</p>
Forster (2012), To Pandemic or Not? Reconfiguring Global Responses to Influenza, STEPS	Global flu responses Political analysis	Political analysis	<p>"... techno-scientific narratives constructed by bio-medical actor networks failed to correspond with the more variegated narratives of multifarious global publics, and so struggled to recruit support and maintain credibility and authority".</p> <p>Cultural, political, and commercial forces need to be considered and harnessed for successful intervention. Requires a determined move to include alternative framings and understandings of the pandemic.</p> <p>One-size fits all responses are insufficient, often misguided. The world would be better-off with a pandemic response and preparedness that takes the needs of the poorest, most vulnerable as its starting point. Focus would then be on disease control, agricultural production techniques, extension advice, etc, rather than preventing disease in developed countries.</p>

			<p>WHO criticised for its handling of H1N1, mainly because it was under influence of pharmaceuticals who benefited from declaration of a pandemic. A broader view of disease, that incorporates alternative views, would keep pharmaceuticals in check.</p> <p>"The world was waiting for a pandemic... and I think that just because people were waiting for this event to occur, when it did occur, everybody capitalised on it" – key informant quote</p>
Sellwood et al (2007), Bird flu: if or when? Planning for the next pandemic	Preparedness planning	Policy response	<p>Influenza A (like H5N1) are only flus which cause pandemics: 1917-19, 1957-58, 1968-69</p> <p>Influenza pandemic requires four conditions: new subtype must be unrelated to previous (pre-pandemic) predecessor/or almost entirely novel to humans; little or no immunity among humans; causes significant illness; must spread efficiently between people.</p> <p>Developing a vaccine: would take 4-6 months, with limits on supply for several months afterwards. Risk that vaccine could become a post-pandemic vaccine, rather than for use in the pandemic itself.</p> <p>Treatment in the interim: ARVs. Where this is not available: social distancing, but depends on rapid and stringent action (often in the absence of good surveillance).</p> <p>International travel restrictions are ineffective, according to modelling, as are temperature controls at airports.</p>
Chanlett-Avery et al (2006), International Efforts to Control the Spread of the Avian Influenza (H5N1) Virus: Affected Countries' Responses, Congressional Research Service	National avian flu palns	Policy analysis	<p>"... the typical national response to a confirmed outbreak of H5N1 has included quarantining the area of infection, culling or vaccinating exposed or at-risk poultry and wild birds, restricting the movement of poultry for trading purposes, testing and treating exposed humans, initiating public information campaigns, and seeking access to anti-viral medication"</p> <p>Nigeria: quarantine of affected farms and culls, led to large-scale poultry sales by farmers</p>
<b>Ebola Mano River countries, 2013-2015</b>			
Richards, P., Amara, J., Ferme, M.C., Kamara, P., Mokuwa, E., Sheriff, A.I., Suluku, R. & Voors, M. 2015 <b>Social pathways for Ebola virus disease in rural Sierra Leone, and some implications for</b>	<p>EVD</p> <p>Burials</p> <p>Public health</p> <p>Contact tracing</p>	Analysis of cross-sectional data and observations from interviews	Understanding people's behaviour and social linkages is critical to understanding transmission

containment. <i>PLoS neglected tropical diseases</i> 9, no. 4.	Community engagement Sierra Leone		<p>Trust in authorities is reasonable, people believed messages on Ebola – but still relied on help from family, not distant authorities and health services. Local authority figures used to spread messages are not the ones that people believe are able to help them.</p> <p>Burial rites, known to be a big factor in spread of E, are not just 'spiritual' – intimately connected to social relations, status and kinship ties of widows, in turn link to land rights claims. So, cannot easily be simply abandoned.</p> <p>Social ties outside village and between villages shape how disease spreads. Must not assume that neighbouring villages have strongest or friendliest ties (legacy of long conflict). This was a barrier to a 'local' focus in Ebola care and control.</p> <p>People move for schooling, work, marriage, trading – carrying infection long distances to urban and other rural areas. Makes contact tracing impossible. People have to volunteer to be tested and isolated. That requires testing and isolation to be <i>attractive</i> options. Must not be seen as somewhere where you die.</p> <p>Since evacuation to centres is often not possible, people need good advice on 'second-best options': how to treat at home in ways that minimise risk of spread to everyone.</p> <p>People need to be able to create and take responsibility for their own rules (eg on burials).</p>
World Bank. 2015. <b>The Socio-Economic Impacts of Ebola in Liberia</b>	EVD Socio-economic impact Liberia	High-frequency mobile phone survey	<p>By March, 40% had not worked since the beginning of the crisis. Agricultural work was down, waged non-agricultural work was up (due to seasonality). Not much change.</p> <p>Job losses were worst for women. Small traders and self-employed worst hit.</p> <p>Food security went up in urban areas, but down in rural ones. But this is hard to interpret given seasonal factors.</p> <p>Schools re-opened but 27% of older children did not go back.</p>
Gatso, T.T., Ordaz-Németh, I., Grimes, T., Lormie, M., Tweh, C., KuEhl, H.S., et al. 2018. <b>The impact of the Ebola virus disease (EVD) epidemic on agricultural</b>	EVD Liberia Agricultural production	Systematic, nationwide random sampling design	<p>More than half reported lower income during crisis than previous year.</p> <p>Geographical proximity of EVD outbreaks did not have impact on household income, agricultural production. But it did have impact on reducing trust in state institutions.</p>

production and livelihoods in Liberia. <i>PLoS Negl Trop Dis</i> 12(8)	Livelihoods		Agricultural production lower in EVD affected areas than non-affected areas. Lack of availability of labour and of cash for inputs.
Kodish, S.R., Rohner, F., Beauliere, J-M., Daffe, M., Ag Ayoya, M., Wirth, J.P., et al. 2018. <b>Implications of the Ebola virus disease outbreak in Guinea: Qualitative findings to inform future health and nutrition-related responses.</b> <i>PLoS ONE</i> 13(8)	EVD Quarantine Guinea	Qualitative surveys (n=42) at government, international aid and community level	Harvest losses due to reduced labour availability, together with outbreak coinciding with planting season. Household food access difficult when quarantined, as normal community sharing not possible. Fewer traders operating, restrictions on going to markets, reducing food buying/selling. Increased food prices, but interviewee reports of price rises much higher than official monitoring. Some resistance to targeted food deliveries due to hostility of villages.
Kodish, S.R., Bio, F., Oemcke, R., Conteh, J., Beauliere, J.M., Pyne-Bailey, S., et al. 2019. <b>A qualitative study to understand how Ebola virus disease affected nutrition in Sierra Leone—A food value-chain framework for improving future response strategies.</b> <i>PLoS Negl Trop Dis</i> 13(9)	EVD Sierra Leone Nutrition Food value-chain	Qualitative survey (n=42) at government, international aid and community level	System-wide impact on the food value supply chain was similar to those typically seen in large-scale disasters such as earthquakes. Range of direct and indirect effects on agricultural production and food storage and processing, as well as distribution, transport, trade and retailing. Culturally-appropriate social and behaviour change communications were a critical response component for improving health, nutrition, and hygiene-related behaviours through community engagement. Before outbreak, Sierra Leone was essentially recovering from the civil war: increasingly strong trade of food commodities (rice, livestock), 13.5% income gains since 2001, proportion of underweight children had decreased from 21 to 16 percent.
Stites, E. and Bushby, K. 2017. <b>Livelihood strategies and interventions in fragile and conflict-affected areas: Assessing trends and changes from 2012 to 2016,</b> <i>Working Paper 57</i> , Secure Livelihoods Consortium	Livelihood Interventions Fragility Conflict-affected areas	Literature review	Cash transfers can offer greater flexibility for livelihood support compared to food aid, especially during infectious disease outbreaks. Can also help overcome difficulties related to border closures, etc.
USAID. 2018. <b>Evaluation of the USAID/OFDA Ebola virus disease</b>	EVD Liberia	Mixed methods involving household survey	Early on, safe and dignified burial programmes did not integrated a culturally-sensitive approach because they did not include affected communities' perspectives.



<b>Outbreak Response in West Africa 2014-2016</b>	Burials	(n=16,000) and health worker survey (n=288)	Intervention came a little too late in process.
Campbell, L. 2017a. <b>Learning from the Ebola Response in cities: Population movement</b> , ALNAP report	EVD Border closures Burials Liberia	Synthesis of evidence and data of population movements during Ebola outbreak, including qualitative interviews with Liberians	Population mobility within and between urban and rural areas became a key challenge for the humanitarian response. Attempts to control it were largely unsuccessful, despite closed borders.  Partly economic (e.g. trade), but also for cultural reasons (burials, weddings) and fear (stigma, HR abuses).  Top-down approaches to population movement are ineffective, need to understand forces driving population movement and engage communities (monitoring, tracking and engagement).
Campbell, L. 2017b. <b>Learning from the Ebola Response in cities: Responding in the context of quarantine</b> , ALNAP report	EVD Cities Quarantine Guinea Liberia Sierra Leone	Synthesis of evidence and data of effects of quarantines during Ebola outbreak in Guinea, Liberia and Sierra Leone	Quarantines can be effective, but should only be used as a last resort. Where they are used, humanitarians need to address needs (e.g. food and water)  In Liberia, quarantine caused confusion and violence (West Point). Guinea adopted 'micro-cerclage' approach, targeting small number of households instead. Sierra Leone used both, using district-level quarantines but moving to household level once transmission dynamics were better understood.  Quarantines especially difficult to impose in urban areas.
Guluma, Y. 2018. <b>Outcome Analysis: Cash transfer programming response to the Ebola Crisis in Sierra Leone and Liberia</b>	Evaluation EVD Cash transfers Sierra Leone Liberia	Qual only 66 FGD, 31 KII, 19 trader interviews, plus quant data from monitoring reports	USAID/FFP supported 120,000 hhs with cash transfers (\$50/month), ag vouchers and CFW and also supported traders with cash - between July 2015 and December 2016 (ie beginning after EVD epidemic)  Other support going to same villages (food aid, ag input support)  Aimed at 3-6 months support in lean season  Cash spent on all the usuals – food, investment, healthcare, schooling  Preference for timing of transfer depended on priority – if ag, then before planting; if food, then lean season  Targeting - most 'contentious' issue. Different agencies used different approaches. Some preferred outsiders do it, others a community approach. High inclusion error.

			<p>Men transfers give to women. Different opinions about whether this empowered women or emasculated men.</p> <p>Some implementation issues – delays of months, problems with physical access to pick up money (for elderly, sick)</p> <p>Partners report quant data on change in HDDS and hunger scores – showing improvement between endline and baseline. But no controls!! (And by end of lean season...)</p> <p>Cash stimulated petty trade, reawakening of savings groups – but not all were sustained.</p>
Murray, A., Majwa, P. Robertson, T. & Burnham, G.. 2015. <b>Report Of The Real Time Evaluation Of Ebola Control Programs In Guinea, Sierra Leone And Liberia</b> , IFRC	<p>EVD</p> <p>Burials</p> <p>Contact tracing</p> <p>Livelihoods</p> <p>Guinea</p> <p>Sierra Leone</p> <p>Liberia</p>	<p>Qualitative methods: key informant interviews, focus group enquiries, desk reviews, field visits at different stages of the project</p>	<p>The epidemic is different from other disasters - instead of starting with devastation and building back services and livelihoods, the Ebola epidemic expanded and moved in uncharted ways. Needs different management paradigms for response approaches.</p> <p>Response needs strong technical support in epidemiology, to be able to anticipate and prepare. You have to be proactive.</p> <p>Need to make data available in real-time to all those who need it. Information systems are critical but under-appreciated – data on epidemic, information/data on interventions and their successes/failures, etc.</p> <p>Need to support livelihoods while the epidemic is ongoing, households cannot wait.</p> <p>'Safe and dignified burials' was critical in halting spread. Front-line volunteers need psychological and morale support.</p> <p>Contact tracing requires huge engagement with each individual. Done simply by officials, it missed most new cases emerging.</p>
Bandiera, O., Buehren, N., Goldstein, M., Rasul, I. and Smurra, A. 2018. <b>The economic lives of young women in the time of Ebola: Lessons from an empowerment programme</b>	<p>EVD</p> <p>Gender</p> <p>Empowerment</p> <p>Sierra Leone</p>	<p>Experimental (RCT) of two interventions, encompassing 4,700 women</p>	<p>In villages where there was no intervention (safe space/club for women), out-of-wedlock pregnancies rose and school enrolment post-crisis fell in areas badly affected by EVD.</p> <p>In villages that were not badly affected by EVD but there was no intervention, transactional sex increased among older women.</p> <p>Impact on agriculture: international and local trade collapsed, markets were forced to close, and food security became an issue by December 2014.</p>

Ali, M. and Hutton, K. 2016. <b>Evaluation of the DFID Ebola Emergency Response Fund (DEERF) in Sierra Leone</b>	EVD DFID Evaluation Quarantine Sierra Leone	Evaluation of DFID Ebola Emergency Response, including systematic desk review, a country visit with semi-structured interviews and focus group discussions	DFID supported 4,441 households with quarantine food and non-food items.  DEERF also supported small, innovative projects aimed at food distribution. E.g. community caretakers and labour gangs to manage farms, business support in the form of cash transfers.
DuBois, M., Wake, C., Sturridge, S. and Bennett, C. 2015. <b>The Ebola response in West Africa</b> , HPG Working Paper, ODI	EVD Burials West Africa	Desk review of literature and data from UN/WHO/WB	WHO efforts to ensure safe burials did not pay attention to seemingly bland details, e.g. colour of body bags.  Initial categorisation of Ebola as a health crisis created issues livelihoods/education ignored.
Bowles, J., Hjort, J., Melvin, T. and Werker, E. 2016. <b>Ebola, jobs and economic activity in Liberia</b> , <i>Journal of Epidemiological Community Health</i> , 70, pp 271-277	EVD Jobs Economic impact	Difference-in-differences analysis of panel dataset of firms (N=402)	EVD caused large decrease in economic activity/jobs in all of Liberia, especially in Monrovia.  Outside Monrovia, restaurants and food/beverage sectors shed the most jobs.  In Monrovia, construction and restaurant sectors suffered most.  Little association between incidence of Ebola cases and declines in economic activity.
ACF. 2015.	EVD Food Security Livelihoods	Summary paper	Main economic cost was in changed behaviour due to restrictions and fear.  Agricultural production affected by disruption of communal working in fields.  Agricultural income affected by limited trader access and loss of demand, affecting perishables in particular.  Biggest impact was on petty traders (many of which poor) or those processing/cooking food. Wage labourers also hit.
Dumas, T. 2016. <b>Mitigating the Impact of the Ebola virus disease on the Most Vulnerable Households through an Integrated Food and Nutrition Security</b>	EVD Cash transfers Sierra Leone	Systematic qualitative approach involving groups of	Beneficiaries used cash transfers to buy food, pay school fees and pay labourers in agricultural lands.  Vegetable production was heavily impacted by grasshopper attacks, mainly due to late sowing due to delays in seed distribution due to Ebola-related restrictions.

Intervention in the District of Moyamba, Sierra Leone, ACF		beneficiaries, key informants, ACF staff members and triangulated with secondary data	Cash transfers can enable households to restart their livelihoods in the context of the Ebola outbreak.
HEART. 2014. <b>Helpdesk Report: Ebola Regional Lesson Learning</b>	EVD Regional lesson learning Social mobilisation interventions	Literature/evidence review	Social learning was principal vehicle through which Ebola was tackled, but this was complicated by conspiracy theories and lack of confidence in government.  Direct sensitisation required to raise awareness about Ebola.  Need to equip local communities with material and knowledge resources to respond to Ebola within their communities.
UNDP. 2015. <b>Assessing the socio-economic impacts of Ebola virus disease in Guinea, Liberia, and Sierra Leone</b>	EVD Socio-economic impact West Africa	Synthesis of three UNDP studies on economic and social impact of Ebola epidemic in Guinea, Liberia and Sierra Leone based on desk reviews, interviews and quantitative data from household surveys	Heaviest toll on active population (15-44). Impact on children includes lost education. Reduced fertility. Positive lessons from prompt responses in Nigeria and Senegal. Need for regional, not just national, response.
Glennerster, R. and Suri, T. 2014-2016. <b>The implications of the Ebola Outbreak on Markets, Traders, and Food Security in Sierra Leone</b>	EVD Markets Traders Food Security Sierra Leone	Phone-based food-price monitoring system (n=185)	<u>November 2014</u>  Number of rice traders fell dramatically but prices remained relatively stable with high price outliers, especially in isolated remote communities that are not self-sufficient.  Resilience: market traders selling from home. Supply chain disruptions close to borders.  Ebola's effect manifested itself in reduced demand and international trade rather than food prices per se.

			<p><u>January 2015</u></p> <p>Prices for basic foods across Sierra Leone remain at or below prices in previous years, with some districts where prices are substantially higher than average.</p> <p>The number of palm oil and gari flour traders declined sharply, but there was a modest increase in number of rice traders.</p> <p>International shipping to West Africa fell in September, but returned to 2013 levels by November/December.</p> <p><u>May 2015</u></p> <p>Agricultural trade has returned close to normal across Sierra Leone.</p> <p>The number of markets closed peaked in October 2014 but has since been in decline.</p> <p>Rice prices remain below their 2012 price, and even lower in cordoned areas.</p> <p>The number of traders for local and imported rice is now similar to previous years.</p> <p><u>February 2016</u></p> <p>The number of traders for both imported and domestic rice dipped pre-harvest but has been largely similar since.</p> <p>Number of traders for gari and palm oil has almost always been consistently lower than in pre-Ebola years.</p> <p>Price of rice has been consistently lower (10%) than in pre-Ebola years, particularly in cordon districts.</p> <p>From May to July 2015, 10% of markets sampled reported to be closed.</p>
Adams, J., Lloyd, A. and Miller, C. 2015. <b>The Oxfam Ebola Response in Liberia and Sierra Leone: An evaluation report for the Disasters Emergency Committee</b>	EVD Liberia Sierra Leone	Impact evaluation based on qualitative methods, including key informant interviews and group discussions	<p>Strong pressure to treat epidemic as medical emergency organised through top-down processes, rather than standard humanitarian coordination.</p> <p>Effectiveness limited by lateness of response and inability to react to changing situation.</p> <p>Need for clearer faster analysis and decision-making.</p> <p>Success in adapting existing competencies to a new situation, but existing plans (e.g. for cholera in Sierra Leone) not drawn in.</p>

			In the end there was a changing focus from house-to-house work to supporting community structures.
Konyndyk, J. 2019. <b>Struggling with Scale: Ebola's Lessons for the Next Pandemic</b> , Centre for Global Development	EVD International response Advanced planning	Desk review of relevant documents and after-action reports as well as series of high-level interviews	There were delays in international response.  There is need for advanced planning on how to change containment strategy at different scales of transmission. Behaviour-centred interventions are more rapidly scalable than medical interventions.
Polygeia. 2016. <b>Lessons from Ebola Affected Communities: Being prepared for future health crises</b>	EVD Contact tracing Quarantine	Evidence review and literature, key informant interviews, findings of 5 meetings	Lack of PPE critical for healthcare worker infections  Insufficient supply of food to quarantined, leading to some breaking quarantine to find food.  Difficulty of contact tracing due to lack of formal addresses, etc.  Supporting communities to identify and implement behaviour change was key.  Complex systems of local leadership and movements of people make it hard to contain.
FAO. 2016. <b>Impact of the Ebola virus disease outbreak on market chains and trade of agricultural products in West Africa</b>	EVD West Africa Market chains Inputs Border closures Prices Resilience	Literature review and qualitative interviews with experts/market chain actors (n=30)	Ebola primarily disrupted functioning of cross-border agricultural market chains.  Traders scared of travelling to affected zones.  Border restrictions, quarantines and checkpoints made trade difficult.  Farmers faced higher costs of inputs, reduced negotiating power (with fewer traders) and instability of prices due to geographical/seasonal patterns.  Consumer prices were largely unaffected, with some exceptions (e.g. isolated communities, border communities in Guinea).  Resilient supply chains: sellers sold on street/at home when markets closed, consumption of local staples instead of imported ones, new trade routes (e.g. Mali), palm previously exported consumed locally,  Local rice production affected by difficulty of maintaining farmer groups.

			<p>Consumption of animal products affected by reduced purchasing power and disrupted feed imports.</p> <p>Awareness-raising campaigns helped reduce consumption of bushmeat, not bans.</p> <p>Cocoa heavily disrupted due to export bans. Led to food insecurity among cocoa farmers reliant on bartering against rice.</p> <p>Lessons: use precautions for labour groups (PPE), safe trade corridors, information campaigns, keep key strategic markets open with right precautions.</p> <p>Overall effect: 12% reduction of production of staple crops, but main impact was reduced trading.</p>
<p>Gunjal, K. and Senahoun, J. 2016.</p> <p><b>Assessing the impact of infectious disease outbreaks on agriculture and food security: The case of the Ebola virus disease outbreak in West Africa,</b> <i>Proceedings of the Seventh International Conference on Agricultural Statistics</i>, Rome 24-26 October 2016</p>	<p>EVD</p> <p>Agriculture</p> <p>Farm labour</p> <p>Food Security</p>	Model estimation	<p>Impact of Ebola was mainly caused by economic damage through changes of behaviour rather than direct mortality/loss of labour (e.g. HIV). In that way, Ebola quite similar to SARS and H1N1 (and COVID?).</p> <p>Reduced farm labour due to aversion behaviours, such as quarantines, border closures, restrictions, fear of labour groups, lack of inputs.</p> <p>Effect on prices was very small.</p> <p>Disruption of food chains occurred due to closure of market, changed traders' behaviour.</p> <p>Impact on maize and cassava smaller due to lower labour intensity.</p>
<p>Harman, S. 2016. <b>Ebola, gender and conspicuously invisible women in global health governance</b>, <i>Third World Quarterly</i>, 37(3), pp 524-541</p>	<p>EVD</p> <p>Gender</p> <p>Global health</p>	Anthropological: review of Ebola response	<p>Women played conspicuously invisible role at every point of the international response to the Ebola outbreak.</p>
<p>USAID. 2019.</p>	<p>EVD</p> <p>Recovery</p> <p>Self-reliance</p> <p>Guinea</p> <p>Liberia</p> <p>Sierra Leone</p>	Impact assessment of USAID's response	<p>Cash transfers to 97,000 households</p> <p>Seeds and tools to 14,000</p> <p>Credit to fund agricultural producers (fisheries, forestry)</p> <p>Support to rice cooperatives so that women got 25% higher prices because of collective bargaining.</p>



			Baseline (2012) to endline (2017): food insecurity went down 30-40% across countries, HDDS up 14-50%, although not directly attributable to USAID interventions (?).
Denney, L., Mallett, R. and Benson, M.S. 2017. <b>Service delivery and state capacity: findings from the Secure Livelihoods Research Consortium</b>	Service delivery State capacity	Synthesis of findings from studies on state capacity in eight countries, including prevention of malnutrition and teenage pregnancy in Sierra Leone	<p>Teenage pregnancy spiked during Ebola outbreak.</p> <p>Distinction between 'hard' and 'soft' constraints. Hard constraints include availability of medicine, whereas soft ones include social norms, beliefs and expectations that are stacked against desired behavioural change. E.g. reluctance to report cases of Ebola out of fear or distrust in authorities (in Sierra Leone) and alternative beliefs about healing.</p> <p>Traditional healers were engaged (late) in the Ebola outbreak, and only once their role in the community was sufficiently recognised.</p>
YMCA. 2016. <b>Ebola Emergency Response: Evaluation and Learning Summary</b>	EVD Liberia Slums Behavioural change	Impact assessment of YMCA's response	<p>Behavioural change was needed to break chain of transmission.</p> <p>Difficulties: Liberia/Sierra Leone had not experienced Ebola before and there was mistrust in gov't.</p> <p>Food security became a concern: lower intake among slum populations in Monrovia, inability to harvest crops. Led to unrest, particularly in West Point, Monrovia.</p> <p>YMCA employed peer educators that targeted groups in different ways: e.g. jingles for motorbike drivers, door-to-door for women, etc.</p> <p>Reached 82,000 people and increased trust.</p> <p>Relieved some hard constraints by providing handwashing facilities, as well as encouraging people to wash hands.</p> <p>Contract tracing using community members.</p> <p>Provided food support to community members and healthcare workers, as well as start-up capital.</p> <p>Lesson: emphasis on using young community leaders; coordinate <i>directly</i> with communities and other agencies; flexibility/adaptation.</p>

World Bank. 2015.	EVD		<p>Prioritise risk management to prevent future recurrence, restoring livelihoods and building community resilience (restore trade flows, tackle malnutrition, recapitalising community banks, addressing structural factors such as clean water, better infrastructure, etc.)</p> <p>Agricultural production growth reduced from 5.7 to 3.3% in Guinea, from 4.8 to 2.6% in Sierra Leone and from 3.5 to 1.3% in Liberia. Surprisingly small.</p> <p>Recommendations: work in ways that strengthen national governments (avoid parallel systems), community engagement to tackle low trust, nurture positive behaviours (e.g. reduced FGM, increased handwashing), lay foundations for improved social protection systems, prioritise women and youth.</p>
International Development Committee. 2016. <b>Ebola: Responses to a public health emergency</b> , House of Commons	EVD Public health DFID	Parliamentary investigation of DFID response	<p>DFID responded very late because WHO did not sound alarm quickly enough (MSF did).</p> <p>Strong cross-government working once response was activated.</p> <p>Recommendations: flexibility, especially in ability to disburse small amounts early in crisis when they are most cost-effective; community engagement needs to take place earlier.</p>
Grunewald & Maury (2020)	EVD Epidemics Pandemics		<p>Additional complications of dealing with pandemics in conflict zones: weak health institutions, mobility of population resulting from violence, access and safety of healthcare workers.</p> <p>Need to use local/epidemiological expertise and find ways of supporting it.</p> <p>Do not forget other health problems.</p>
Mercy Corps (2014)	EVD Economic impact Liberia	Household survey (n=122) and trader survey (n=122), 20 FGD, 65 KIIs.	<p>66% households had less income</p> <p>64% had increased debt</p> <p>Critical food insecurity expected in April 2014</p> <p>Border controls critical due to importance of cross-border trade, especially in rural areas.</p> <p>Half of vendors had changed their suppliers.</p> <p>Additional risk insurance for shipping pushed up prices.</p> <p>Longer transportation times leading to more spoilage of perishable products. E.g. curfews and checkpoints.</p> <p>Disruption of agricultural labour system and shortage of inputs.</p>

Christensen, D., Dube, O., Haushofer, J., Siddiqi, B., Voors, M. 2020. <b>Building Resilient Health Systems: Experimental Evidence from Sierra Leone and the 2014 Ebola Outbreak</b>	EVD Health systems Resilience Community accountability Sierra Leone	Randomised control trial of two interventions in 254 government-run health clinics	Low perceived quality of care can lead to low utilization of health systems. Accountability interventions improved utilization and health outcomes in Sierra Leone during the Ebola crisis. Trust in government also correlated with decision to utilize healthcare. Conclusion: build trust and confidence in health workers.
HPN/ODI. 2020. <b>Special feature: Responding to Ebola in the Democratic Republic of Congo</b> , <i>Humanitarian Exchange</i> , No. 77	EVD Contact tracing Humanitarian		Providing food to Ebola contacts can increase compliance with monitoring, but also increase people identifying themselves as contact persons. Financial assistance to Ebola victims recommended by MSF but not implemented as too complex. Main issue for survivors of Ebola: stigma, job loss, particular vulnerability of women and young people.
WFP	EVD	Evaluation	Food assistance was an effective complement to containment strategies in reducing transmission. Initial phase characterised by extreme WFP caution: staff did not know how to monitor distribution, how to use PPE, best modality to use (cash/food) They revised food distribution methodologies. Scale-up difficult because new procedures were meshed into normal operations. Gender insufficiently incorporated
UNICEF	EVD	Evaluation based on field visits/mixed methods	Community care centres set up too late, in November 2014. Still useful to help with transmission. Informed, motivated and empowered communities were needed rather than one-way communication. C4D strategy revised accordingly, engaging social scientists and medical anthropologists. Funding gaps at critical stage (Sep-Dec 2014) Struggled to integrate child protection services, education and other (e.g. nutrition) into complete system at community level.

			UN coordination was a struggle.
Li, S.-L., Ferrari, M.J., Bjørnstad, O.N., Runge, M.C., Fonnesbeck, C.J., Tildesley, M.J., Pannell, D., Shea, K. 2019 <b>Concurrent assessment of epidemiological and operational uncertainties for optimal outbreak control: Ebola as a case study.</b> Proc. R. Soc. B 286	EVD Sierra Leone Epidemiological uncertainty Operational uncertainty	Simulated model of caseloads	Determining how best to manage infectious disease outbreaks may be hindered by epidemiological uncertainty and operational uncertainty. Authors present approach to simultaneously address both sources of uncertainty and elucidate which hinders decision-making most.  Epidemiological effective intervention might not be optimal if its costs outweigh its epidemiological benefit, but under higher-budget conditions, resolution of epidemiological uncertainty is valuable.  When budgets are tight, operational and epidemiological uncertainty are equally important, resulting in significant reduction of caseload.
<b>Ebola DRC</b>			
Roberts et al. 2020. <b>Special feature: Responding to Ebola in the Democratic Republic of Congo, No. 77</b>	Ebola DRC Response Lessons	Special Issue, HPG journal	Despite W.A. experience: outcomes no better in DRC; fatality rates of over 60%  Vaccine helpful only for healthcare workers  Lessons not learned from W.A.: earning community trust, protecting health care providers, large percentage of infections happened in health centres, inadequate health care for other diseases, poor conditions in isolation centres, little respect for burial traditions, no psychosocial care for survivors/bereaved, little involvement of faith-based organisations, neglect of SRH  Lack of community trust meant long delays between symptoms and treatment  Social protection for infected, as well as anyone they have been in contact with, to prevent return to work  Psychiatric care for survivors is essential
Elbe, Leach & Scoones. 2013. <b>Pandemic Flu Controversies: What have we learned? Reflections from a workshop to discuss lessons, policy implications, STEPS</b>	Pandemic flu Responses Lessons	Policy analysis	Very little preparedness or international cooperation, despite inevitability  Localised narratives on pandemics are too often ignored, especially in resource-poor environments, where global framings and interventions dominate – often to detriment of effectiveness  Interventions often have greater impact than disease itself

			<p>Political, moral, ethical, justice issues more important than medical issues when decisions need to be made about public health policy</p> <p>Best responses are transparent, include diverse sources/opinions, are cross-disciplinary, include local knowledge and expertise; importantly, they are measured and appropriate to risk level</p>
Dzingirai et al. 2017. <b>Zoonotic diseases: who gets sick, and why? Explorations from Africa</b> , STEPS	<p>Zoonotic disease</p> <p>Transmission</p> <p>Social factors</p>		<p>Africa assumed to be the place where zoonotic disease will “spill over”</p> <p>Women more likely to catch zoonotic diseases: firstly because of their work in gardens/around the home (proximity to bats); secondly, because of caring duties</p> <p>Gender analysis important for understanding impact of zoonotic disease</p>
International World Vision. 2019. <b>Ebola Virus Disease Emergency Response</b>	<p>EVD</p> <p>Emergency response</p> <p>Lessons</p>	Evaluation	<p>Outbreak complicated by conflict, food insecurity, vulnerable/displaced populations</p> <p>WASH: messages around handwashing are not getting through in a situation where WASH facilities are completely inadequate</p> <p>Poor internal coordination and communication between organisations working in Kivu; insecurity/conflict led to delays in rolling out programming</p> <p>WVI one of few organisations providing psychosocial support</p> <p>Delay in funding meant delay in rolling out safety net programmes</p>
Rohrwerder. 2020. <b>Secondary impacts of major disease outbreaks in low and middle-income countries</b> , K4D, IDS	<p>Epidemics</p> <p>LICs, MICs</p>	<p>Epidemics</p> <p>Poverty</p>	<p>Serious short- and long-term consequences arrive from measures to control disease – quarantine, travel restrictions, social distancing</p> <p>Social impacts: reduced social cohesion and trust, stigmatisation of survivors/health care workers, school closures, orphaned children, increased labour/disease burden on women, trade off between short and long-term development goals, population displacement</p> <p>Economic impacts: livelihood generation, decline in fiscal revenues, decline in growth, increased prices, decrease in household incomes</p> <p>Secondary health impacts: diversion of funds from routine healthcare, strain on health care system, decrease in medical staff, increased mental health burden</p> <p>Political and security impacts: increases political tensions, coercive responses can lead to civil unrest, decreased trust in institutions</p>

			<p>Agriculture: effect mainly due to lost labour, either through disease or (more importantly) quarantine/social distancing measures.</p> <p>Agricultural production in Guinea: rice production was down by 20%, coffee by 50%, cocoa by 30%, corn by 25%</p> <p>Women are likely to be affected more: tend to work in agriculture, but also have care duties</p> <p>DRC experienced alarming rise in malnutrition in children: food was more expensive, while household incomes declined; harvests were lower, due to labour lost to sickness/quarantine; fear of bushmeat reduced protein intake; much of agricultural activity is undertaken communally, which was banned</p>
Kelly. 2020. <b>Evidence and lessons on efforts to mitigate the secondary impact of past disease outbreaks and associated response and control measures</b> , K4D, IDS	Control measures Disease outbreaks	Review	<p>Causality between epidemics and secondary effects is bidirectional</p> <p>Responses have focused on victims of disease, neglecting other health and economic need. Author argues for need to take a “whole society approach that attends not only to those individuals directly affected by the outbreak, but also to their broader communities”</p> <p>Need anthropologists to avoid generic ideas around ‘community engagement’, ‘gender sensitivity’ or ‘youth’. This should reduce coercive nature of some responses, and reduce resistance to them.</p>
Kirigia et al. 2019. <b>The monetary value of human lives lost through Ebola virus disease in the Democratic Republic of Congo in 2019</b>	Value of lives Deaths Ebola DRC	Statistical analysis	<p>Health expenditure per capita in DRC: USD 21 – of these 3 are government, 9 are private expenditure, 9 are external health providers.</p> <p>USD 74-198 (depending on estimates) would be required to achieve SDG3</p> <p>Many Ebola deaths attributed to lack of health care investment</p> <p>Average value of lives lost was International \$13,801</p> <p>Total value of lives lost: approx. International \$17,761,539</p>
Roper. 2019. <b>What can be learnt from Ebola about the dangers of global health security approach</b> , Medecins sans Frontiers	Ebola Health Security Approach	Field experience / lessons	<p>Treating outbreak as a threat to global health security, rather than a humanitarian crisis, creates mistrust as people are treated as disease vectors and guinea pigs rather than patients</p> <p>International support only started once there was a risk of EVD spreading to rest of the world</p>

			<p>Social problems caused by the epidemic not addressed</p> <p>Patients mistrust/are scared of Ebola treatment centres and staff involved – cases of running away to prevent treatment</p>
Fanning. 2018. <b>Crucial course corrections for the Ebola Response in Beni, DRC</b> , Oxfam	<p>Lessons</p> <p>Counter-productive control responses</p>	Field experience / lessons	Further discussion of mistrust and mistakes made by international organisations
Nguyen 2019. <b>An Epidemic of Suspicion – Ebola and Violence in the DRC</b> , MSF	<p>Lessons</p> <p>Counter-productive control responses</p>	Field experience / lessons	"Since 2014, anthropologists have pointed out that resistance to Ebola control efforts reveals ongoing, legitimate concerns about the conduct of interventions, respectful treatment of local populations, and resource distribution"
Tariq et al. 2019. <b>Assessing the reporting delays and the effective reproduction number: The Ebola epidemic in DRC</b>	<p>Reporting delays</p> <p>Effective reproduction number</p> <p>Ebola</p> <p>DRC</p>	Statistical	<p>Administrative reporting delays decreased from 17.4 weeks to 3.3 weeks</p> <p>R: was calculated to the 0.9</p> <p>Probably not particularly relevant, except to say that it is important to have good administrative systems</p>
Kelly et al. 2018. <b>Beyond vaccines: improving survival rates in the DRC Ebola outbreak</b>	<p>Treatment</p> <p>Ebola</p>	Medical	Aggressive hydration goes some way to raising survival rates (in high income countries death rates are 18.5%, in DRC it was 70.8%)
<b>COVID-19 China</b>			
Chen, K., Zhang, Y., Zhan, Y., Fan, S. and Si, W. 2020 <a href="#">How China can address threats to food and nutrition security from the coronavirus outbreak</a> . IFPRI blog, 12 April 2020	<p>Food prices</p> <p>Supply chains</p>	<p>Blog</p> <p>Speculative piece</p>	<p>Speculative piece on production, supply chains, processing, incomes, nutrition.</p> <p>Highlights negative impacts on poultry sector recorded to date.</p> <p>Notes opening up of 'green channels' for priority transport of fresh agric products.</p> <p>"On Feb. 4, the Ministry of Agriculture and Rural Affairs issued an emergency notice calling on related departments to maintain order in markets and ensure ample supplies of meat, eggs, and milk."</p>
Zhong, R. and Mozur, P. 2020 <a href="#">To Tame Coronavirus, Mao-style Social Control Blankets China</a> , New York Times, 15	<p>Corona lockdown</p> <p>Responses</p>	News	Describes how lockdowns have been enforced via mobilisation of civil servants, party officials, retirees, NGO workers etc

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Wu, X., Xu, X., & Wang, X. 2020 <a href="#">6 lessons from China's Zhejiang Province and Hangzhou on how countries can prevent and rebound from an epidemic like COVID-19</a> , World Economic Forum	Response options Information technology	Blog	Hangzhou, the capital of Zhejiang Province, reacted quickly to COVID-19 before the city had any confirmed cases.  The city used big data and information technology, like QR codes, to track and stop the spread of the coronavirus.  Careful planning and clear communication lessened the impact of COVID-19 compared to Wuhan.
The Economist, 2020, <a href="#">Planters, plagued: COVID-19 is making it harder to grow food in China</a> , Anonymous, 14 March 2020	Agriculture Food production	Media	Notes political priority of ensuring spring planting goes ahead and supplies reach farmers (and food reaches consumers) through fast-track 'green channels'  Some impacts already being felt on meat supply because slaughterhouses cannot get labour.
The Economist, 2020, <a href="#">The post-virus economy: China goes back to work, but not back to normal</a> , Anonymous, 26 March 2020	Economic impact Supply & demand side effects	Media	Economic round-up of latest data and speculation about future economic growth  Supply side: gradual return to normal, but still hampered by labour shortages as migrants return but subjected to 14-day quarantines.  Demand side: exports hit by spread of CO19 elsewhere; domestic consumption still recovering.
Rozelle, S., Rahimi, H., Wang, H. & Dill, E. 2020 <a href="#">Lockdowns are protecting China's rural families from COVID-19, but the economic burden is heavy</a> , IFPRI blog, 30 March 2020	Health impacts Control measures Indirect impacts of control measures Lockdown	Blog	Findings from survey of >700 rural village informants across 19 counties in seven provinces  Focussing on (1) health impacts; (2) measures to control spread; and (3) (indirect) impacts of control measures on employment, income, access to food, access to health care and children's education.  Headlines: lockdowns, enforced in both urban <i>and</i> rural areas, successful in controlling spread of virus, but major impacts on employment and incomes, esp for migrant workers. Some knock-on impacts on food access, healthcare and education.
Li, B. and Lu, B. 2020, <a href="#">How China made its COVID-19 lockdown work?</a> , East Asia Forum	Lockdown measures Enforcement Digital apps	Blog	Describes the range of high and low-tech measures used to enforce lockdowns in urban and rural areas, from digital apps to road blocks.



Wang, V. (2020) <a href="#">China's coronavirus battle is waning. Its propaganda fight is not</a> , <i>New York Times</i> , 8 April 2020	Politics of COVID reporting Chinese politics	Media	Highlights the internal and international politics emerging around COVID reporting & response  Esp the international relations 'tug-of-war' China's now engaged in – China as a munificent & responsible member of the global community vs China as a serial cover-up merchant
Swine Flu Pandemic (2009)			
Scoones, I. 2009 <a href="#">Swine Flu: Some Emerging Lessons</a> . STEPS blog.	Politics of pandemics Political economy of agriculture	Blog	<p>Risks, uncertainties and mortalities: media favours estimation of potential human mortalities, often based on dubious sources and leading to panic/speculation. Other extreme is keep quiet, cover-up, assure populace. Neither works and need to accept uncertainty in public debate to avoid inappropriate pressure on public policy. Prepare for surprises and respond rapidly to pandemic with high reliability professionals. These were missing during Swine Flu.</p> <p>Health inequalities and preparing for a pandemic: good to do a global assessment, but need to recognise that structural inequalities will affect outcomes of disease spread. E.g. Swine flu caused more deaths in Mexico than anywhere else. Could be due to complex medical reasons, limited access to healthcare or effectiveness of response. Poverty and inequality play big part in dynamics of diseases. Many countries do not have pandemic preparedness plan.</p> <p>Local knowledge and disease surveillance: Poor surveillance and reporting systems can mean an outbreak can get out of control, e.g. in Mexico, where residents complained about wind blowing fetid air from industrial pig farm their way, where it gets stuck because of hills behind village. This is where initial outbreak was reported. But company and gov't dismissed such knowledge because residents were 'not doctors'. Local understandings are vital.</p> <p>Naming, labelling and the politics of international organisations: debate about whether it was a human/public health crisis or an animal/food chain crisis. Vets distancing themselves from swine flu outbreaks, and FAO very late to investigate link between animals and pigs. Look towards avian flu where there was coordinated response between animal and human health efforts. Problem: OIE deals with international livestock/meat trade, so pressure to downplay disease outbreaks.</p> <p>Political economy of agriculture: strong lesson from avian influenza is that changing structure of livestock industry is essential to understanding disease spread. More complex</p>

			than 'big agribusiness'/industrial techniques. Rapid growth of informal/medium-sized industrial poultry production. Poor animal welfare/environmental standards, often connected to political circles, no autonomy, etc. Need to do a PE assessment of pig industry in Mexico.
Banati, D. 2011 <b>Consumer response to food scandals and scares</b> . <i>Trends in Food Science &amp; Technology</i> 22, 56-60.	BSE Dioxin crisis Avian flu Swine flu Irish pork crisis Melamine	Evidence review	<p>BSE: conflicting messages broadcasted in media and non-harmonised risk management decisions led to general loss of trust in authorities and the food supply chain. Fear of beef generated by uncertainty. A decade later, fear was still present. Can be avoided if proper risk analysis framework was in place including science-based hazard exposure. BSE did lead to improvement of traceability of food production.</p> <p>Dioxin crisis (1999): dioxin accidentally added to 500 tonnes of animal feed in Belgium, contaminating 2,500 poultry/pig farms. Poultry/pork consumption dropped to 69 and 93%, respectively. Again, lots of uncertainty and no proper risk assessment, leading to economic crisis (Belgian food embargoed) that was much bigger than original problem. Led to European Food Safety Authority being established.</p> <p>Avian flu: huge amount of money spent to eliminate disease in 2003. 467 known cases, 282 died. Despite being localised in Indonesia/Vietnam, 66% of Europeans feared virus. Huge drop in uncooked poultry meat export, 20-30%.</p> <p>Irish pork crisis (2008): dioxin-contaminated feed affected 50 or livestock farms. Proper risk assessment allowed authorities to establish that 99.98% of national beef production was free from contamination. Coordination, etc. limited crisis expanding.</p> <p>Swine flu (H1N1): spread from Mexico to 208 countries. Confusing messages led to uncertainty and hysteria, with many fearing a repeat of Spanish flu. Pork consumption plummeted.</p> <p>Chinese melamine case: first detected in US and led to widespread distrust in Chinese food, resulting in 30-40% drop of sales and 3 billion dollars of financial damages.</p> <p>What to do to avoid negative effect of disease outbreaks? Risk analysis, contact tracing, such as Rapid Alert System for Food and Feed. Agencies need to provide easily understandable, science-based, balanced information in a timely manner.</p>

Cohen, J. 2009. <b>Out of Mexico? Scientists Ponder Swine Flu's Origins</b> , <i>Science</i> Vol 324, 700-703.	Mexico Vaccine Epidemiology Swine flu	News item	<p>Unlike COVID, young adults most likely to be affected by swine flu, including developing pneumonia. Usually age bracket that is least likely to suffer respiratory illnesses.</p> <p>Longer-than-usual flu season meant that Mexican authorities only discovered swine flu quite late. Cases surfaced in mid-March but only realised it was something new in April. First US case confirmed on 14 April.</p> <p>Origin of virus still not clear: consists of 'classical' North American swine influenza, North American avian influenza and remaining third divided between human and Eurasian swine. Either from Mexican farm or pig transported from North America to Asia (human then returning to Mexico) as early cases were in communities well-known for migration. Canadian worker then infected pigs after travelling back from Mexico (!).</p> <p>Interesting discussion around ethics of producing vaccine: suspend seasonal flu vaccine to release capacity? But only have capacity to produce up to 1.4 billion vaccines a year. Not enough for human population.</p>
International Development Committee, 2016, <b>Ebola: Responses to a public health emergency</b> , House of Commons Report	DFID WHO Ebola Swine flu	Inquiry	Inquiry into WHO's response to the swine flu showed that it was ill prepared to deal with the pandemic, and suggested a number of changes. WHO still chose to encourage the organisation to prioritise high-mortality conditions.
Deckers, J. 2010. <b>Could some people be wrong by contracting swine flu? A case discussion on the links between the farm animal sector and human disease</b> . <i>Journal of Medical Ethics</i> 37, 354-356.	Swine flu Medical anthropology Zoonotic pathogens Moral philosophy Industrial livestock	Thought experiment	<p>Argument has been made that the conditions in which many humans keep farm animals facilitate the development of new viruses and their transmission within and between species. Humans facilitated swine flu, although there is considerable uncertainty with regard to the question of whether either extensive systems or intensive (concentrated) farming systems are more directly implicated.</p> <p>Research has shown that 60% of all known human pathogens are zoonotic and that number is growing (three-quarters of recently emerged human pathogens are zoonotic) due to intensive farming systems, among other reasons. E.g. because animals are crammed together, close contact with farmers,</p> <p>Complex and overlapping moral questions: e.g. concentrated animal feeding operations provide animal products cheaply to many who are now living. Might justify risks</p>

<p>Goodwin, R., Haque, S., Neto, F. and Myers, L.B. 2009 <b>Initial psychological responses to Influenza A, H1N1 (“Swine Flu”)</b>. <i>BMC Infectious Diseases</i> 9:166</p>	<p>Swine flu Fear Response Malaysia Europe</p>	<p>Results of qualitative survey</p>	<p>Based on questionnaire study of Malaysia (N=180) and Europe (N=148), assessing changes in transport usage, purchase of preparatory goods, perceived risk groups, indicators of anxiety, assessed estimated mortality rates for seasonal flu, effectiveness of seasonal flu vaccination, and changes in pork consumption</p> <p>Previous pandemics led to stockpiling of goods, the victimisation of particular population groups, cancellation of travel and boycotting of particular foods (e.g. pork). During SARS and Ebola, association of viruses with Chinese or African ‘others’ made Europeans feel relatively safe from infection.</p> <p>26% ‘very concerned’ about being a flu victim (42% of Malaysians, 5% Europeans) 36% reported reduced public transport use (48% Malaysia, 22% Europe), 39% flight cancellations (56% Malaysia, 17% Europe), 8% had purchased preparatory materials (e.g. face masks 8% Malaysia, 7% Europe), 41% Malaysia (15% Europe) were intending to do so. Groups considered at risk included immune compromised (87%), pig farmers (70%), elderly (57%), sex workers/highly sexually active (53%), and homeless (53%). In Europe, 64% greatly underestimated mortality rates of seasonal flu, 26% believed seasonal flu vaccination gave protection against swine flu, 7% reduced/stopped eating pork, 3% purchased anti-viral drugs.</p> <p>Almost a third of Malaysians thought homosexuals were likely to be already immunocompromised through infection with HIV/AIDS.</p> <p>Conclusion: initial responses to swine flu show large regional differences in anxiety, with Malaysians more anxious. Discussions with family/friends may reinforce anxiety. Particular groups are being perceived as being at greater risk, potentially leading to increased prejudice during pandemic. Europeans require more info about seasonal flu inoculation.</p> <p>Important: anxiety or the unrealistic belief that others are at greater risk than themselves (<i>Note: relevant for COVID</i>) can reduce our willingness to enact healthy behaviours.</p> <p>Naming of swine flu in int’l media led to immediate drop in pork demand, leading to hundreds and millions of dollars of losses in North America. Communication efforts on behalf of the pork industry helped reassure customers and markets recovered (Gietz, 2010).</p> <p>Reported cases of swine flu probably well below actual cases, because of disincentives of reporting.</p>
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Goodwin, R., Haque, S., Hassan, S.B.S. & Dhanoa, A. 2011. <b>Representations of swine flu: perspectives from a Malaysian pig farm.</b> <i>Public Understanding of Science</i> 20(4), 477-490	Swine flu Opinions Cultural representations Fear Malaysia Europe	Results of qualitative survey	<p>Public responses to novel influenza viruses are often rooted in cultural representations of disease and risk, but little research in locations associated with outbreak.</p> <p>They interviewed 120 Malaysian pig farmers: 37% felt they were at risk of infection, two-thirds at least somewhat concerned about being infected. The most anxious farmers believed particular societal out-groups (homosexual people, homeless people, sex workers) were at higher infection risk. 46% claimed friends had avoided them since outbreak.</p> <p>They assess findings using three theories:</p> <p>Evolutionary theory: xenophobia likely to increase, especially those who violate cultural norms</p> <p>Theory of social representations: manifests itself in our fear of intensive agricultural farming during swine flu. Not just related to fear, but can stigmatise those who are considered at risk of infection.</p> <p>Terror management theory: primarily concerned with how individuals try to boost their self-esteem and cultural world views when faced with their own mortality.</p> <p>People have developed fear of Asia, where wet markets allow for contact between live animals and people, and where dense urban populations and perceived lack of hygiene allow disease to spread.</p> <p>Although agriculture can be seen as threatening, providing a distribution point for dangerous toxins or degrading ecological and natural foundations of life, few respondents directly related agriculture or farming methods to the present swine flu outbreak.</p> <p>More research in particular is needed into the potentially complex relationship between the general population and health care workers, a group often discriminated against during influenza pandemics and avoided by many of our pig farmers (Bai et al., 2004).</p>
Attavanich et al. 2011. <b>The Effect of H1N1 (Swine Flu) Media Coverage on Agricultural Commodity Markets.</b> <i>Applied Economic Perspectives and Policy</i>	Swine flu Media Consumer behaviour Behavioural changes	Model based on media index and futures prices	<p>Media coverage related to the name "swine flu" led to negative impact on futures prices of lean hogs, but not on other futures prices. Lasted 4 months, leading to revenue loss of about \$200 million.</p> <p>Initial labelling and widespread publicity regarding swine flu caused downturn in domestic and int'l pork markets. April 2009: futures price for lean hogs dropped 15%.</p>

			<p>Consumer fear of infection, and several pork-importing countries imposed bans on swine and pork products (Russia and China). Also had effect on feed grains.</p> <p>WHO reiterated that pork was safe to eat and renamed swine flu to 2009 H1N1 in May 2000. But name stuck even a year later.</p> <p>Research showing that governments are very bad at expressing accurately the nature and scope of risk in the case of disease outbreaks: e.g. Canada BSE, US H1N1</p> <p>Significant relationship between number of deaths caused by outbreak and intensity of media coverage (Bomlitz and Brezis, 2008).</p>
Johnson, R. 2010. <b>Potential Farm Sector Effects of 2009 H1N1 "Swine Flu": Questions and Answers.</b> Congressional Research Service	<p>Swine flu</p> <p>Pork prices</p> <p>USA</p> <p>Trade bans</p> <p>Fear</p>	Evidence review	<p>Pork prices dropped when swine flu outbreak first started, leading to repercussions in other agri markets as well (e.g. feed). Countries, including US, banned imports. This is despite WHO, FAO, WTO and OIE issuing joint statement that pork products are not a source of infection.</p> <p>27 countries, including China and Russia, had imposed trade restrictions by June 2009.</p> <p>Although H1N1 cannot be contracted through cooked or uncooked pork, it can spread from pigs to people and from people to pigs, raising concerns about livestock workers. CDC estimates 15-25% of swine farmers have been exposed to swine flu viruses at some point in their lives, as well as 10% of vets.</p> <p>Alberta, Canada: swine herd infected by human. Turkey flock in Chile and Virginia (US) also infected.</p> <p>Surveys revealed widespread misperceptions about how swine flu can be contracted (e.g. 13% from eating pork in US; 20% of Chinese believe this as well).</p> <p>Many viewed trade bans/restrictions as politically motivated or intended to protect pork producers in their own countries – e.g. Russia.</p> <p>Early estimates: US pork industry would lose \$400 million; US pork exports down 31-36% in May and June 2009.</p> <p>Reactions: USDA implemented purchase program to help boost prices: up to \$250 million (in the end they purchased \$201 million, it seems).</p>

<p>Singer, M. 2009 <b>Pathogens Gone Wild? Medical Anthropology and the “Swine Flu” Pandemic.</b> <i>Medical Anthropology</i> 28:3, 199-206</p>	<p>Swine flu Stigma Medical anthropology</p>	<p>Evidence review</p>	<p>Swine flu pandemic raises questions concerning the capacity of medical anthropology to respond usefully to such disease outbreaks and their health and social consequences.</p> <p>Lindenbaum: anxiety and vulnerability links different phenomena, not just disease outbreaks but terrorism, financial crash, corporate criminals, environmental change, intensification of agriculture, etc.</p> <p>Threat of new and renewed pathogens is significant, given rapid changes in terms of urbanisation, unsustainable farming practices, resistance to antibiotics, etc.</p> <p>Emergent pathogens are natural, but their appearance among humans, their health and social impacts are mediated by microsocial processes embedded within large-scale inequalitarian social structures and their environment-shaping influences.</p> <p>Medical anthropology can bring three things to swine flu pandemic: field monitoring of pandemic as a biosocial phenomenon; assessment of biosocial origins and ongoing social influences of the pandemic; research-based and culturally informed involvement in public health applications.</p> <p>Stigma is often amplified during disease breakouts: but this reflects prevailing axes of social division. In case of swine flu, media and public jumped on ‘illegal aliens’ from Mexico.</p>
<p>Wallace, R.G. 2009. <b>Breeding Influenza: The Political Virology of Offshore Farming.</b> <i>Antipode</i>, 41:5. 916-951</p>	<p>Influenza Phylogeography Virulence Agribusiness Poultry intensification AgFDI</p>	<p>Journal article</p>	<p>Looks at social origins of H5N1, but written in the year of H1N1. Integrates pandemics with political economies of agribusiness and global finance. Argues that southern China provides a reservoir of near-human-specific recombinants subject to a phase change in opportunity structure brought about by China’s newly liberalised economy. Influenza seems to be able to integrate selection pressures by human production across continental distances.</p> <p>H5N1 manifests itself in regions of the world where animal health surveillance remains underdeveloped or degraded by structural adjustment programs associated with int’l loans/neoliberal trade agreements.</p> <p>Rural landscapes of many of the poorest countries are now characterised by unregulated agribusiness pressed against periurban slums. Globalised poultry allows virus to explore various evolutionary options.</p> <p>Previous pathogenic strains of H5N1 (e.g. in 1970s Michigan) have been far less virulent.</p>

			<p>Evidence that H5N1 outbreaks more likely to occur in large-scale commercial poultry operations than in backyard flocks, but they originate from smallholdings. Ability to spread in industrial livestock make them virulent as genetic monocultures of domestic animals remove immune firebreaks that usually slow down rate of transmission (Garrett and Cox, 2008). Large sizes and densities also increase transmission, along with depressed immune response from being in crowded space. High throughput provides continually renewed supply of susceptibles, the fuel for evolution. Killing animals early also increases virulence since it favours pathogens that spread more quickly and reach transmission threshold (virulence load) earlier. Chickens processed within 40 days now... Greater the culling, the more pressure there is for virus to evolve virulence.</p> <p>Swine flu H1N1 is industrial in origin: genetic segments have been found to originate from different parts of the world. Not possible for small farmer to amass this variety.</p> <p>Livestock revolution: emerged when vertically-integrated producers started buying up backyard producers, leading to explosion of chicken/hog populations. Largest producer in Asia: CP Group, which owns poultry farms in several countries. Helps spread of virus as Japan's import ban on chicken from China in 2005 shows. CP just increased exports from its Thailand operations instead.</p> <p>Corporate business also often has connections with politics – helps cover-up disease outbreaks, E.g. Thailand/CP group in 2000s. Independent producers left out of the loop and their livestock suffered. Strong lobby preventing implementation of measures that would prevent disease outbreaks.</p> <p>Costs are routinely externalised: health of workers, pollution of surrounding land and water (fish kill), food poisoning, etc.</p> <p>For decades a variety of influenza subtypes have been discovered emanating from southern China. E.g. due to warmer weather (flu all round), high population density, live bird markets, etc. Mass immigration to Guangdong, where 700 million chickens are located.</p> <p>Guangdong also has easy access to international trade, and is an expatriate capital. Gov't efforts to expand inland increased H5N1's geographic scope.</p>
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Science and Technology Committee. 2009. <b>Pandemic Influenza: Follow-up'</b> , House of Lords report	DFID Flu line WHO	Evidence review	<p>Swine flu first pandemic in 40 years – declared by WHO on 11 June 2009.</p> <p>Most cases in July mild, but more severe or fatal cases involved patients with “underlying health conditions” (similar to today?)</p> <p>WHO recognised UK as one of best-prepared countries in the world due to advance purchase agreements of pandemic-specific vaccine, stockpiling to ensure 50% of population are treated in ‘worst case’ scenario.</p> <p>Government planning a “whole system” test to see how various parts of system (e.g. primary care, ambulances, hospitals, mental health services) actually interact in practice. House of Lords calling for them to do so earlier.</p> <p>Also calls to set up “Flu Line” earlier and ensure it can deal with expected demand.</p> <p>DfID has also commissioned a research project (costing £3.9 million over three and a half years) examining risks and risk management in avian influenza, which will hopefully lead in the long-term to a clearer understanding of best practice in HPAI control—effectively reducing risk while promoting equitable growth and poverty reduction. This research project is being carried out by a consortium including FAO, the International Food Policy Research Institute (IFPRI), the International Livestock Research Institute (ILRI), the Royal Veterinary College and the University of California at Berkeley.</p>
Schmidt, C.W. 2009. <b>Swine CAFOs &amp; Novel H1N1 Flu: Separating Facts from Fears.</b> <i>Environmental Health Perspectives</i> 117:9.	Swine flu CAFOs Political economy of agriculture	Op-ed	<p>One source of original swine flu outbreak are concentrated animal feeding operations (CAFOs)</p> <p>H1N1 also the cause of the Spanish flu, which killed 100 million people in Europe. Only discovered that it started in pigs long after the human pandemic ended.</p> <p>H1N1 commonly found in pigs, which typically survive/exhibit flu-like symptoms. More likely in CAFO environment.</p> <p>CAFOs release ammonia-laden, airborne emissions that are linked to asthma, mucous membrane irritation and other respiratory symptoms. The facilities have further been implicated in the emergence of antibiotic-resistant bacteria and reduce quality of life indicators in surrounding communities.</p> <p>H1N1 not required to be reported to OIE (despite Spanish flu!)</p>

			<p>Strong aversion from swine producers to even test for pandemic strain because they worry they would have to destroy their animals and lose that income. Alberta herd was destroyed without compensation... Moreover, countries that report infections face trade sanctions.</p> <p>Need to combine surveillance programs with economic protection.</p> <p>CAFO workers significantly (up to 50 times) more likely to have H1N1 antibodies than nonexposed controls.</p> <p>Conflict of interest: most studies funded by agribusiness.</p>
<p>Keenlside, J. 2016 <b>Pandemic Influenza A H1N1 in Swine and Other Animals.</b></p> <p><i>Current topics in microbiology and immunology</i></p>	<p>Swine flu</p> <p>Surveillance</p> <p>Disease origin</p>	Evidence review	<p>In order to be successful, future surveillance and reporting policies must include provisions to protect the livelihoods of farmers.</p> <p>H1N1 has been known to exist for many decades and has stayed relatively unchanged. Linked to the 1918 'Spanish flu' and it has been postulated that this virus jumped from humans to swine in the USA during the pandemic. In 1998, two new triple reassortments appeared in swine in the USA, with human like genes, indicating viral change. Seasonal outbreaks occur, but since 1998 the disease has changed expression to occur year-round and be more pathogenic.</p> <p>Avian influenza (H5, H7 and H9) frequently circulates between water birds and domestic poultry, sometimes infecting mammals.</p> <p>Coinfection with two different influenza viruses could lead to reassortment and the emergence of a novel influenza with potential public health significance. Virus receptors differ between mammals and birds but swine have cell surface receptors for both avian and mammalian viruses. It is therefore easier for swine to contract avian flu viruses than it is for humans. As a result, swine are a potential 'mixing vessel'. Pigs are often in close contact with poultry, ducks and humans, especially in Asia, where many new virus strains originate.</p> <p>Swine influenza virus infections in most mammals are ubiquitous and generally mild, no public health action is currently taken when outbreaks occur. Some countries vaccinate to prevent economic losses, but influenza is no reportable and is not monitored by the World Organization for Animal Health (OIE – Office International des Epizootics). In poultry, H5, H7 are reportable to OIE because of their potential to be highly pathogenic to both birds and</p>

			<p>humans. This leads to regulatory action such as testing, monitoring and control through depopulation of infected birds.</p> <p>Swine mostly exhibit mild, respiratory symptoms but no death. In birds, influenza mainly affects gastrointestinal system (not respiratory). In both this may lead to reduced productivity (i.e. growing, egg laying, etc.). But severe illness in other mammals, including humans.</p> <p>May 2009: H1N1 confirmed in a small swine herd in Alberta, probably infected by a barn worker who returned from Mexico with flu. Outbreaks lasted two weeks, mostly mild symptoms but some impact on growth afterwards. Further 5 herds were infected in Manitoba, then from July to September 2009 in Argentina, Australia, Quebec, Manitoba and Ireland, confirming that humans were the main vector.</p> <p>In August 2009, Chile identified H1N1 in a species other than swine at a commercial turkey breeding farm. Symptoms of reduced egg production and shell quality. Birds recovered and returned to normal in 3 weeks. Workers also affected.</p> <p>9 ferrets discovered with H1N1 in Oregon, including owners. Domesticated ferrets are susceptible to human influenzas because of similar viral receptors.</p> <p>Cases among dogs in China and New York, as well as among cats in Iowa, Oregon and among a cheetah in a wildlife park in California. Also among wildlife, including striped skunks, badgers, binturong, racoons, etc.</p> <p>Studies confirm that no viral RNA was detected in pork meat at days 3, 5 and 7 post infection from 30 pigs experimentally infected for all body parts except for lungs. There is no evidence that humans can contract the virus from consumption of pork.</p> <p>Responses: government-imposed movement controls on herds. Mass slaughter not seen as effective or warranted given the mildness of the disease and fact that humans are vector of disease. Owner of Alberta herd opted to have his herd destroyed due to media pressure.</p> <p>In Egypt and Norway, mass slaughter was attempted as a method of control. But efforts abandoned once it became apparent that humans were source of virus.</p>
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Jonas, O.B. 2013. <b>Pandemic Risk</b> , World Bank, World Development Report	Swine flu Egypt Public health response	Evidence review	<p>Coordinating approaches and communications is important</p> <p>In an emergency, things can go very wrong because of poor risk communications. For instance, the Egyptian government killed all 300,000 of the country's pigs in May 2009 without adequately compensating the owners, in a reported attempt to control the 2009 H1N1 pandemic flu, while WHO and other health authorities had publicly announced that they had stopped using the erroneous term "swine flu" and that culling of the pigs would do nothing to diminish the H1N1 flu threat. The incorrect perception that some of the infection risk originates in swine resulted in substantial hardship for the poor, marginalised community that raises pigs in Egypt.</p> <p>Moreover, there were additional costs: the trash that the pigs once consumed accumulated in massive piles. Other governments also based their responses on the 'swine' flu misnomer. More than 20 countries imposed restrictions on pork imports from Mexico and the US. In the US alone, losses in the pork sector exceeded \$1 billion in April-October 2009, although there was apparently no flu infection risk from pork and related products. For zoonotic diseases, both human and veterinary health authorities need to be involved in naming and characterising the disease to ensure that information is accurate and that they correctly convey risks to the public.</p>

SARS			
Yikung, F. 2003. <a href="#">SARS, floods and droughts hit farmers</a> , China.org.cn, 6 June 2003	SARS Farmers' incomes	Op-ed	Government target of 4% increase in farmers' net income for 2003 will not be met.  Notes 70-80% of farmers' income comes from jobs in cities, but 4 million forced to return to rural homes because of SARS.  Hints at SARS-related discrimination against migrant workers.  Further handicaps: floods in Hunan Province put strain on rural economy; drought in north-east China and Inner Mongolia drive more farmers to cities, but fewer jobs because of SARS.
China Daily. 2003a. <a href="#">Rural income hit by SARS</a> . 18 July 2003	SARS Farmers' incomes	Op-ed	At peak of SARS epidemic, farmers' cash income drops 3% on average (my note: may not include off-farm income?)  Fewer farmers returning to work in cities – impact on incomes.  Restrictions on selling overseas noted, owing to "technical barriers for Chinese produced agricultural products"
China Daily. 2003b. <a href="#">Commentary: Refilling Farmers SARS-hit Pockets</a> . 2 August 2003	SARS Urban economies Rural economies	Op-ed	Urban economies quick to recover despite being hardest hit by epidemic  Rural economies far less developed, much harder hit, slower to recover.
China Daily. 2004. <a href="#">Rural Income Rises but Growth Slow</a> . 26 January 2004	SARS Economic impact	Op-ed	Pick up in agricultural economy one year after SARS, but long-term effects felt: growth much slower than previously projected.  Cause for concern for government: fear that slow rural growth could undermine social stability (growing rural-urban gaps).
Hanna & Huang. 2004. <a href="#">The Impact of SARS on Asian Economies</a> . <i>Asian Economic Papers</i>	SARS Chinese economy Economic impact	Predictive model	Predicted loss of 1.5% GDP to Chinese economy, actual loss of 0.5%.  The economic impact of the disease magnified in poor countries and regions, with poor public health infrastructure and sanitation.

Monaghan, K.J. 2004. <b>SARS: DOWN BUT STILL A THREAT.</b> In: <a href="#">Learning from SARS: Preparing for the Next Disease Outbreak</a> : Workshop Summary. Washington (DC): National Academies Press.	SARS Economic impact	Workshop summary	<p>Draws attention to the risk posed by and to China's rural migrant labour population (c180 million people)</p> <p>Co-morbidities (ie HIV, TB) and malnourishment as a factor increasing case fatality and thus local economic disruption.</p> <p>Impact of loss of key workers either through illness or death magnified in population hovering around poverty line.</p>
Rawski, G. 2005. <b>SARS and China's Economy.</b> Chapter 5 in: A. Kleinman and J. Watson <i>SARS in China: Prelude to Pandemic</i> (Stanford: 2005)	SARS Economic impact Transportation Agricultural output	Predictive model	<p>Short-term impact on Chinese economy, analysis and longer-term predictions.</p> <p>Supposes link between breakdown in transport sector demobilising rural migrant workers and a decrease in Agricultural output</p> <p>Though no data available to prove link, given experience with COVID-19, likely.</p> <p>Disappearance of jobs for rural migrant labourers in cities put pressure on farmers income (losing supplementary budget), which was already in decline.</p>
Sleigh et al. 2006. <b>SARS and China's Rural Migrant Labour: Roots of a Governance Crisis.</b> Chapter 20 in: <i>Population Dynamics and Infectious Disease in Asia</i> . World Scientific Publishing.			<p>SARS mainly impacted urban centres (Beijing/Hong Kong/Guangzhou), but rural migrant labourers singled out as potential vector for disease between urban and rural locations.</p> <p>Major issue that labourers not seasonal but travel year-round – continual flux. Concerns migrants could contract disease in cities, travel back to rural homes and put local population at risk</p> <p>Rural areas esp vulnerable - lack health care resources &amp; infrastructure.</p>
Brahmbhatt, M. 2008. <a href="#">On SARS Type Economic Effects During Infectious Disease Outbreaks</a> , World Bank Research Paper	SARS Economic impact Misinformation	Evidence review	<p>Economic disruption stemmed largely from panic rather than rate of infection or fatality.</p> <p>Widespread misinformation caused more panic buying and stockpiling of drugs.</p> <p>Recommends policies of education/honesty regarding the potential risk caused by disease.</p>

			<p>Though acknowledges that this is difficult when official knowledge is limited by ability of public health infrastructure to detect cases - more common in rural areas of developing economies.</p> <p>Recommends strengthening surveillance capabilities of public health infrastructure.</p>
Beutels, N. and Jia et al. 2009. <a href="#">The Economic Impact of SARS in Beijing, China</a> . <i>Journal of Tropical Medicine and International Hygiene</i> .	SARS Economic impact	Journal article	<p>Does not explicitly link adverse effects on rural economy, focuses on commercial sector, tourism and public transport.</p> <p>Public transport increases difficulty of rural migrant workers to obtain jobs in cities? (see below)</p>
Li, Y.H. 2016. <b>Healthcare Reform in Mainland China: The relationship of healthcare reform and economic development in Chinese rural and urban areas</b> . PhD Thesis, Iowa State University	SARS Healthcare Economic development	Thesis	<p>Increasing disparity between urban and rural economic development in China early 21st century, widening gulf between health care provision exposed by 2003 SARS epidemic.</p> <p>Social disparity between urban/rural populations key factor in poor healthcare delivery in latter.</p>



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Calow, R; Feyertag, J; Levine, S; Löwe, A; Wiggins, S (2020) Rapid Evidence Review: Policy interventions to mitigate negative effects on poverty, agriculture and food security from disease outbreaks and other crises, APRA, Future Agricultures Consortium



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